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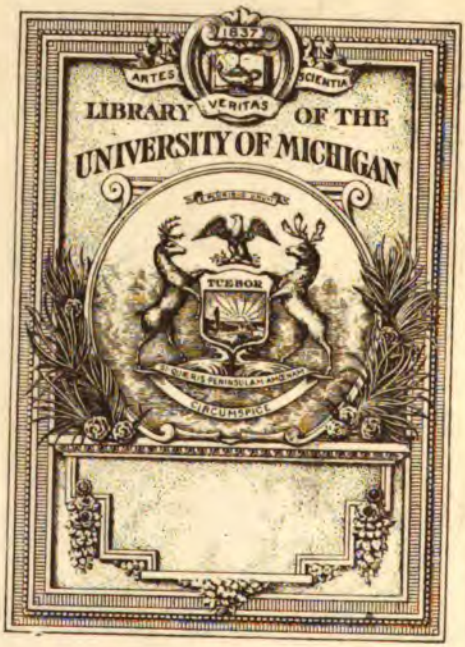

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AMERICAN ASSOCIATION
FOR
STUDY AND PREVENTION
OF
INFANT MORTALITY

SEVENTH ANNUAL MEETING
MILWAUKEE
1913

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AMERICAN ASSOCIATION
FOR
STUDY and PREVENTION
OF
INFANT MORTALITY

TRANSACTIONS OF THE SEVENTH ANNUAL MEETING

MILWAUKEE, OCTOBER 19-21, 1916

Headquarters of the Association
Medical and Chirurgical Faculty Building
1211 Cathedral Street, Baltimore, Md.

PRESS OF
FRANKLIN PRINTING COMPANY
BALTIMORE
1917

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Secretary, Dr. Philip Van Ingen, 125 East 71st St., New York
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Dr. J. Gurney Taylor, Secretary, 1330 Wells Bldg., Milwaukee

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1917

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1918

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1919

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1920

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1915-1916

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Pediatrics

Chairman, Dr. Borden Veeder, Washington Univ. Medical School, St. Louis

Propaganda

Chairman, Mr. George R. Bedinger, Detroit

Public School Education for Prevention of Infant Mortality

Chairman, Prof. Abby L. Marlatt, University of Wisconsin, Madison

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Chairman, Dr. John S. Fulton, State Dept. of Health, Baltimore

Membership

Chairman, Dr. Philip Van Ingen, New York

Educational Leaflet and Booklet

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Chairman, Dr. J. Whitridge Williams, Baltimore

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Executive Office, 1211 Cathedral Street, Baltimore, Maryland

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AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

REPORT TO COUNCIL OF NATIONAL DEFENSE

The following statement of service the Association is prepared to render during the war period was reported to the Council of National Defense in response to a communication addressed to Dr. W. C. Woodward, President of the Association, by Dr. F. S. Simpson, Chief of the Medical Section of the Council, requesting that a committee be appointed to prepare such a report:

1. Believing that as a means of maintaining our national vigor, no greater service can be rendered our country than the conservation of the health of the citizens of the future,
   THE ASSOCIATION OFFERS TO UNDERTAKE IN CO-OPERATION WITH THE Children's Bureau, a campaign of publicity to stimulate the maintenance of infant and maternal welfare work already in existence, and the extension of such work.

2. As a means of securing such care and advice for mothers and young children, in this country, in families in which need has been rendered acute through the war, especially through the enlistment of the wage earners in the Army or the Navy,
   THE ASSOCIATION OFFERS ITS SERVICES IN URGING ORGANIZATIONS THAT are affiliated with it to seek out such families and provide such care.

3. The Association believes that every possible effort should be made to enable mothers with young children to care for them in their own homes. Should it be impossible to prevent the employment in gainful occupations of mothers with infants or with other very young children outside of their own homes,
   THE ASSOCIATION OFFERS ITS SERVICES THROUGH
   its individual membership, its affiliated organizations, its relations with Federal Bureaus and national organizations, to urge that adequately supervised care be furnished at the place of employment.

4. THE ASSOCIATION PLEDGES THE CONTINUANCE OF ITS EFFORTS TOWARD THE extension of activities which have a direct bearing upon the welfare of mothers and children, such as—
   The promotion of birth registration,
   The establishment and maintenance of centers for infant and maternal welfare work, with follow-up care of children up to school age, in cities and rural communities, under the direction of physicians and nurses who have had special training for such work.

Committee: J. H. MASON KNOX, JR., M. D., *Chairman*
W. C. WOODWARD, M. D.
GRACE L. MEIGS, M. D.
GERTRUDE B. KNIPP, *Secretary.*

May 25, 1917.

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SEVENTH ANNUAL MEETING

of the

AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

The seventh annual meeting of the American Association for Study and Prevention of Infant Mortality took place in Milwaukee, October 19-21, 1916. In connection with the meeting a joint session on Pediatrics was held with the Milwaukee County Medical Society. The address of the President, Dr. S. McClintock Hamill, was delivered at the general session held at the Hotel Wisconsin, Friday night, October 21. All other sessions took place at the Public Museum.

SESSIONS

The sessions were held as follows:

Thursday morning, October 19:

Obstetrics. Dr. A. B. Emmons, 2nd, Boston, Chairman

Thursday afternoon:

Propaganda. Mr. George R. Bedinger, Detroit, Chairman

Round Table Conference, Obstetrics

Thursday night:

Pediatrics. Joint session with Milwaukee County Medical Society. Dr. Borden S. Veeder, St. Louis, Chairman

Friday morning, October 21:

General Session. Annual business meeting of the Association. Reports of affiliated societies

Friday afternoon:

Joint session. Governmental Activities and Vital and Social Statistics. Dr. Wm. C. Woodward, Washington, Chairman

Public School Education. Prof. Abby L. Mariatt, University of Wisconsin, Chairman

Friday night:

General session. Address by the President, Dr. S. McClintock Hamill, Philadelphia, followed by an informal reception

Saturday morning, October 21:

Joint session. Rural communities and Nursing and Social Work. Dr. Dorothy Reed Mendenhall, University of Wisconsin, Chairman

General Meeting of the Association

Saturday afternoon:

Round Table Conference, Nursing and Social Work. Miss Harriet L. Leete, Cleveland, Acting Chairman

Two meetings of the Board of Directors were held, the first on Thursday morning, and the second, Friday afternoon. The regular meeting of the Executive Committee preceded the former. The meeting for organization of the incoming Executive Committee took place on Saturday morning, October 21.

The report of the Executive Secret ary is to be found on page 16; that of the Treasurer brought to the close of the fiscal year, on page 21.

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The following committees were appointed by the President:

Nominations—

Mr. George R. Bedinger, Detroit, Chairman
Dr. A. B. Emmons, 2nd, Boston
Dr. J. H. Mason Knox, Jr., Baltimore
Miss Harriet L. Leete, Cleveland
Dr. Philip Van Ingen, New York City

Resolutions—

Dr. H. L. K. Shaw, Albany, Chairman
Dr. Borden S. Veeder, St. Louis
Dr. Wm. C. Woodward, Washington

Transactions—

Dr. John S. Fulton, Baltimore, Chairman
Dr. J. H. Mason Knox, Jr., Baltimore
Miss Gertrude B. Knipp, Baltimore

The following committees were continued:

Prenatal Record Forms
Traveling Exhibit
Educational Leaflet and Booklet
Leaflet on the Common Cold
Membership Campaigns
Propaganda

BUSINESS SESSIONS

Business meetings of the Association were held Friday, October 20, and Saturday, October 21.

AFFILIATED SOCIETIES

Brief reports were made by representatives of the Affiliated Societies at the session on Friday morning.

The report of the Executive Secretary showed that 170 societies engaged in baby-saving activities were identified with the Association and that 60 had sent written reports for publication in the Transactions. *See page 275.*

The traveling exhibit and the parcel post exhibit owned by the Association were on view at the Public Museum, during the meeting. There was also a display of banners and charts outlining the work of the affiliated societies.

ELECTION OF DIRECTORS

The following Directors whose terms had expired were re-elected for a term of five years:

Dr. Isaac A. Abt, Chicago
Dr. Henry L. Coit, Newark
Mr. Homer Folks, New York City
Dr. Henry F. Helmholz, Chicago
Dr. L. Emmett Holt, New York City
Dr. John Howland, Baltimore
Mr. Sherman C. Kingsley, Chicago
Miss Harriet L. Leete, Cleveland
Dr. J. W. Schereschewsky, Washington
Dr. J. P. Sedgwick, Minneapolis
Prof. C.-E. A. Winslow, New Haven

The following new Directors were elected for the terms indicated:

FIVE YEARS

Mr. Albert Cross, Philadelphia
Dr. Hoyt E. Dearholt, Milwaukee
Miss Edna L. Foley, Chicago
Dr. Francis E. Fronczak, Buffalo
Dr. Frances Hollingshead, Columbus
Dr. J. Hurty, Indianapolis

FOUR YEARS

Mrs. Philip B. Fouke, St. Louis

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OFFICERS FOR 1917

At their meeting Friday afternoon, October 20, the Directors elected Dr. Philip Van Ingen, New York City, President-elect for 1917-1918

At the same time the Board declared

Dr. Wm. C. Woodward, Washington, the President-elect, President for 1916-1917

The Board then elected the following other officers for the year beginning October 21, 1916:

First Vice-President, Mrs. Wm. Lowell Putnam, Boston
Second Vice-President, Dr. Borden S. Veeder, St. Louis
Secretary, Mr. Albert Cross, Philadelphia
Treasurer, Mr. Austin McLanahan, Baltimore
Executive Secretary, Miss Gertrude B. Knipp, Baltimore

EXECUTIVE COMMITTEE

Dr. Wm. C. Woodward, Washington
Mr. Albert Cross, Philadelphia
Mr. George R. Bedinger, Detroit
Dr. S. McC. Hamill, Philadelphia
Dr. Henry F. Helmholz, Chicago
Dr. J. H. Mason Knox, Jr., Baltimore
Miss Harriet L. Leete, Cleveland
Dr. T. C. McCleave, Berkeley
Dr. Mary Sherwood, Baltimore
Dr. Philip Van Ingen, New York City

The following resolutions were reported favorably by the Committee and were unanimosuly adopted by the Association:

Whereas, the Seventh Annual Meeting of the American Association for Study and Prevention of Infant Mortality, held in Milwaukee, October 19-21, 1916, has been most instructive, and its successful outcome was due in very large measure to the active and interested cooperation of the citizens of Milwaukee and Madison and to local organizations, committees and individuals;

Therefore, Be it Resolved, That the sincere thanks and appreciation of the Association be extended to:

The Mayor of Milwaukee
The Bureau of Health
Merchants and Manufacturers Association
Women's Federated Clubs of Wisconsin
Wisconsin Anti-Tuberculosis Association
The local press and the press associations
The Committee on Local Arrangements, its Chairman, Dr. Ruhland, and Secretary, Dr. Taylor
The Sub-Committees on Membership, Finance, Publicity, Exhibits, Meeting Places and Entertainment

And to the following individuals:

Mr. F. W. Luening, Deputy Commissioner of Health
Mr. Henry L. Ward, Curator of the Public Museum
Miss Johnson and her associates in charge of the Registry Bureau

Dr. Wm. C. Woodward, the incoming President, was introduced to the Association by the outgoing President at the general session Friday night.

The report of the Committee in charge of the Registration Table showed that 26 states, the District of Columbia and Canada were represented at the meeting.

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REPORT OF EXECUTIVE SECRETARY

November 16, 1915—November 15, 1916

In every way this past year has been the best in the history of the Association—in membership, in finances, and in influence.

MEMBERSHIP

As a result of the work of the two committees on increased membership —the general committee, Dr. Van Ingen, Chairman, and the local committee, Dr. Myers, Chairman—290 new members were enrolled during the eleven months which closed with the Milwaukee meeting; of these, 94 are in Wisconsin. The total paid-up membership for 1916 is 1,110, and 107 in advance for 1917, as compared with 806 total in 1915, and 163 in advance. Thirty-three new affiliated societies have been added; the total paid up during the year being 143. Sixty-one have submitted reports of the year's work, and fifty-four sent posters or banners descriptive of their activities, to the annual meeting.

FINANCES

The total receipts from all sources have amounted to $10,293.70. Of this amount $6,422.45 came in from membership dues. The disbursements have amounted to $7,187.51.

BABY WEEK CELEBRATIONS

Unusual opportunities for reaching small towns and communities more or less remote from the larger centers in which infant welfare work is well under way, were afforded by baby week celebrations during the winter and early spring of 1916. Special correspondence of this sort brought the office in touch with individuals or groups of workers in forty-three States, representing 250 communities.

For many of these opportunities we are indebted to the Children's Bureau, and to the announcements made in the publications of the Bureau, of information that could be obtained from our Association.

We are indebted also to the U. S. Public Health Service for advice and for the cordial and generous response that has been made to the requests forwarded from the office for booklets on the Care of the Baby. The total number distributed in this way, during the year, has amounted to more than 90,000 copies.

In a number of instances it has been possible to extend the influence of the Association through our relations with other organizations. The Southern Sociological Congress, for instance, is utilizing one of our parcel post exhibits in a series of conferences that will cover the larger towns in eight or ten of the Southern States. These conferences began in September, 1916, and will continue during the winter of 1917.

EXHIBITS

The parcel post exhibit referred to above, was assembled last Spring in response to the pressing need for a compact and easily portable exhibit adaptable for use in the smaller towns and communities that could not afford the expense of handling the general travelling exhibit. The parcel post exhibit is a photographic reproduction of the general travelling exhibit. It consists of 20 panels, mounted on muslin and unframed, so that they can be readily rolled. The total weight including the packing case is about sixteen pounds.

The exhibit was tried out experimentally, but soon proved a decided success—one health officer in Virginia who had it for a week last spring wanted it again for another week this fall. A charge of ten dollars a week

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was made for its use, and by July the fund accruing from the rentals had covered the original cost of the exhibit. A second exhibit was then ordered for general engagements, and number 1 was released for engagements for which there would be no financial return.

The general exhibit was shown last spring in Elizabeth, N. J., in connection with a Baby Week celebration; later in Wilkes-Barre; in May in Milwaukee, and in June in Hamilton, Ontario, where it was used by one of our Canadian affiliated societies. It was brought back to Milwaukee for the annual meeting.

The Association also owns a set of lantern slides based upon the travelling exhibit. For the convenience of speakers at Baby Week celebrations or at Baby Health Conferences a selection was made of fifty of the slides. In addition to the collection that has been sent out from the executive office, reproductions have been put on the market by the Educational Exhibition Company.

FORMULATION OF AUTHORITATIVE STATEMENTS SUGGESTED

Inquiries received at the office, recently, indicate the demand for an authoritative statement of the procedure to be followed in infant and maternal welfare work. A few selected at random will illustrate this point.

> From the organizer of health conferences for the State Department of Health of a Middle-Western State, for suggestions as to state-wide plans for infant and maternal welfare.
>
> From a children's specialist from a city on the Pacific Coast for information regarding the methods that have been successful in the Eastern cities.
>
> From the editor of a mother's page in a popular magazine, as to ways by which she could help her subscribers specifically, and the cause of the baby, generally. The majority of the magazine's readers live in the rural districts, and because of their distance from medical centers or physicians, the editor wrote that it was impracticable to tell them to consult a doctor when general advice was desired in regard to the health of the children in the family. When it was suggested that she refer her readers to the Division of Child Hygiene in the State Department of Health, the fact had to be faced that only four States, so far, have established such Divisions.
>
> From the director of an University Extension Institute in Colorado for material for distribution to mothers at the institutes to be held in small towns in that State.
>
> From a recently organized welfare society in a California city for information as to the best way of coordinating the work of the various infant welfare agencies.

Inquiries of this kind are a part of the every day mail and usually can be answered by drawing upon information that is readily accessible, but in view of the fact that the campaign for the prevention of infant mortality has gone far enough beyond the experimental stage for the essential features to be well established, I would suggest that a definite statement be formulated embodying these principles and containing practical suggestions for their application, and that steps be taken to place such information at the service of any who may desire it.

In formulating these suggested plans the following groups should receive special consideration.

> Baby and maternal welfare societies, financed by private philanthropy in the small cities and towns, and particularly in the rural districts.

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Semi-public organizations analogous to the Babies' Welfare Associations of New York and Philadelphia, which coordinate the work of local activities.

Divisions of Child Hygiene in the small cities.

Divisions of Child Hygiene in State Departments of Health.

NEEDS OF THE MOTHER OF MODERATE MEANS

There is also urgent need for the working out of plans which will open the way so that the intelligent young mother of moderate means may have the benefit of advice and training, such as the mother in very poor circumstances can get with the greatest ease, in the majority of the larger cities, by going to the nearest feeding clinic, or, by taking advantage of the teaching that is given in some of the continuation schools. As the organized infant welfare work is carried on at present, the young mother of moderate means is almost completely disregarded.

PROGRESS SHOWN BY REPORTS OF AFFILIATED SOCIETIES

Reports received during the last month from some of the affiliated organizations are more than ordinarily significant of the progress that is being made by the infant welfare societies and of the way in which they are adapting themselves to the needs of their respective communities. The State-wide plan that is being tried in North Carolina is described by Dr. W. C. Rankin, Secretary of the State Board of Health, reporting for his Department which is affiliated with this Association. The plan includes:—

a. Preliminary survey by the State of two county units for the Children's Bureau to determine the basis for a county unit plan. When put into effect this will be analogous to the county unit plan followed in the general health work of the State and will be financed by the county and State jointly.
b. The customary activities for the control and reduction of children's diseases throughout the State.
c. A summer school for practitioners, at which courses in pediatrics were given during the summer of 1916, under the auspices of Department of Health and the State University. The course was arranged in institute form and was held in six towns. 150 practitioners attended. It is planned to give a similar course in obstetrics during the summer of 1917.

A city-wide plan is outlined in the joint report from the Cleveland Department of Health and the Babies' Dispensary. Incidentally it is interesting to note that the establishment of a Bureau of Health instruction in connection with the Department of Health is mentioned, in the report, as one of the advances made during the current year.

The possibilities of the coordination of the work of the public and private agencies are convincingly indicated in the reports of the Philadelphia and New York Babies' Welfare Associations. Among the items mentioned in the Philadelphia report is the fact that through the efforts of the Philadelphia Association the Pennsylvania State Board of Examiners for Registration of Nurses has included in the curriculum recently presented to the Training Schools in Pennsylvania a recommendation that social service work be given nurses while in training. Follow-up care of patients discharged from the maternity hospitals is mentioned as one of the advances brought about during the year by the New York Babies' Welfare Association.

STATEMENTS OF CLERICAL WORK AND MEMBERSHIP

A report of the clerical work at the office and a statement showing the geographical distribution of the membership are appended to this report.

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AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

MEMBERSHIP.

	Life Members 1910-1915	Advance for 1916	Paid during 1916			Advance for 1917	
			Arrears for 1914-1915		Current	Old Members	New Members
Arizona	..	..	..	..	1	..	..
California	..	1	..	1	29	2	2
Colorado	..	..	..	..	5	..	1
Connecticut	..	2	..	..	29	..	2
Delaware	..	1	..	..	..	..	..
District of Columbia	..	5	..	..	22	1	2
Florida	..	..	..	..	3	..	..
Georgia	..	..	..	..	3	..	..
Illinois	..	6	..	..	48	1	5
Indiana	..	..	..	..	4	..	1
Iowa	..	1	..	..	7	..	..
Kansas	..	1	..	..	3	1	1
Kentucky	..	2	..	..	9	..	..
Louisiana	..	..	..	..	5	..	..
Maine	..	1	..	..	5	..	..
Maryland	5	..	..	1	74	1	..
Massachusetts	..	9	..	..	73	2	1
Michigan	1	3	..	1	33	..	5
Minnesota	1	..	..	..	26	..	..
Missouri	1	1	..	..	19	..	1
Montana	..	..	..	..	2	..	2
Nebraska	..	..	..	..	3	..	..
New Hampshire	..	..	..	..	3	..	..
New Jersey	..	10	..	..	30	..	4
New Mexico	..	..	..	..	1	..	..
New York	1	33	1	1	214	1	4
North Carolina	..	..	..	..	3	..	..
North Dakota	..	..	..	..	2	..	..
Ohio	5	3	..	..	72	1	1
Oklahoma	..	..	..	..	1	..	..
Oregon	..	..	..	..	1	..	..
Pennsylvania	3	71	..	..	87	1	4
Rhode Island	..	2	..	..	12	..	..
South Carolina	..	..	..	..	2	..	..
South Dakota	..	..	..	..	1	..	..
Tennessee	..	..	..	..	1	..	..
Texas	..	2	..	..	3	..	..
Utah	..	..	..	..	3	..	..
Vermont	..	..	..	..	1	..	..
Virginia	..	..	..	..	8	..	..
Washington	..	..	..	..	2	..	..
West Virginia	..	..	..	..	3	..	..
Wisconsin	..	3	..	..	59	4	54
Canada	..	2	..	..	11	1	..
Cuba	..	..	..	..	1	..	..
Hawaii	..	..	..	..	2	..	..
Panama	..	..	..	..	1	..	..
Philippine Islands	..	..	..	..	2	..	1
China	..	1	..	..	..	..	..
England	..	2	..	..	1	..	..
New Zealand	..	1	..	..	..	..	..
Totals	17	163	1	4	930	16	91
					163		
					17		
					1,110 Total 1916 Membership		

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1916—Total Membership

Paid in advance		
Contributing Members	8	
Affiliated Societies	13	
Active Members	142	
		163
Life Members—1910-1915		17
Paid during 1916		
Life Members	7	
Sustaining Members	21	
Contributing Members	68	
Affiliated Societies	125	
Active Members	709	
		930
		1,110

1917—Advance Payments

Sustaining Members	9	
Contributing Members	11	
Affiliated Societies	24	
Active Members	63	
		107

CORRESPONDENCE

November 16, 1915—November 15, 1916

Total pieces of mail sent out			16,467
Personal letters		3,493	
Circular letters		4,188	
Bills and receipts (sealed but without letters)		1,604	
Second class matter, including packages, programs, etc.		7,013	
Postals to affiliated societies		169	
Booklets:			
Through U. S. P. H. Service 89,000 (special)			
Through the Baltimore office	2,957		
Educational Leaflets No 1:			
To Baby week committees 24,875 (special)			
Through the office (regular corresp.)	3,862		
Motherhood Folders:			
To Baby Week Committees 14,475 (special)			
Through the office (regular corresp.)	2,358		
Preliminary programs	9,409		
Final programs	2,410		
Obstetrical leaflets	504		
Prenatal care record forms	1,562		
Membership circulars	17,440		
Slips 1/1/16	1,981		
Circulars 1/15/14/	657		
Membership cards	1,238		
Transactions slips	1,144		
If not a member	2,121		

Respectfully submitted,
GERTRUDE B. KNIPP,
Executive Secretary

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REPORT OF THE TREASURER

November 16, 1915 to November 15, 1916

Balance on hand November 16, 1915					$ 366.22
Receipts:					
	1916	Advance for 1917			
Membership—					
Active	$2,205.40	$ 195.05	$2,400.45		
Affiliated	647.00	120.00	767.00		
Contributing	920.00	110.00	1,030.00		
Sustaining	525.00	300.00	825.00		
Life			1,400.00	$6,422.45	
Contributions—					
General			$1,010.00		
From Select and Common Council of Philadelphia towards expenses of 1915 meeting and printing Transactions of meeting			2,000.00	3,010.00	
Transactions—Sale of printed copies:					
1910-1914			$ 110.93		
1915			310.46	421.39	
Exhibit—Rentals				210.30	
Interest on bank balances				62.77	
Sale of Educational Leaflets, Motherhood Folders, etc.				166.79	10,293.70
					$10,659.92
Disbursements:					
Salaries				$2,699.98	
Rent of Office				200.00	
Printing—General				781.10	
Transactions of Philadelphia Meeting:					
Printing 2,000 copies			$1,218.28		
Distribution—Postage		$ 134.04			
Expressage		16.53			
Wrapping		38.18	188.75	1,407.03	
Postage				455.22	
Office Supplies				127.00	
Clerical Help:					
Official stenographic reports 1915 and 1916 meetings			$ 200.00		
At Philadelphia for 1915 meeting			48.00		
At Baltimore Office			373.90	621.90	
Telephone				36.25	
Exhibit (Repairs and two new parcel post exhibits)				362.79	
Traveling expenses				122.35	
Multigraphing and typewriting				74.42	
Expressage and telegrams				39.30	
Miscellaneous:					
Badges for Philadelphia Meeting			$ 81.00		
Advertising in Survey			20.00		
Clipping service, janitor service, insurance, ice, etc.			159.17	260.17	$7,187.51
Balance on hand November 15, 1916					$3,472.41

Respectfully submitted,
AUSTIN MCLANAHAN,
Treasurer.

American Association for Study and Prevention of Infant Mortality, Baltimore, Md.

GENTLEMEN:—

In compliance with the request of your Executive Committee, we have made an audit of the accounts of the American Association for Study and Prevention of Infant Mortality for the year ending November 15, 1916, and find them correct as stated in the Treasurer's report.

Very truly yours,
ALEXANDER BROWN & SONS

Jan. 4, 1917

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REPORT OF THE COMMITTEE ON REVIEW

In the annual address of the President of the Association, it was suggested that the contributions to the various sections of the Association be reviewed and summarized after each meeting with the view to extracting from them the practical points which they contain, formulating them in such way as to make them of actual working value to private agencies, public health departments and individuals.

In compliance with this suggestion, a Committee was appointed at the final meeting of the Board of Directors, to be known as the Committee on Final Review, whose duties were outlined in the following resolution:

"That the Committees in charge of the section programs of the Association be requested to review the transactions of their sections within a month following each annual meeting, with a view to extracting from them whatever material may, in their judgment, be of special value and that such material be submitted to a committee of final review for the formulation of workable plans of action on the various subjects that have been discussed, to be published in the Transactions and in whatever form that, in their judgment, may seem desirable."

Upon the request of this Committee, summaries of the sections of the last meeting were submitted by the various chairmen.

After a careful review of these summaries and the original papers, it was determined that they did not lend themselves to satisfactory presentation in the form that was intended by the Association when it created the Committee on Review.

The Committee has therefore reached the conclusion that it would be inadvisable to attempt a publication of any summary for the present year.

In order that the same difficulty may not obtain another year, the Committee suggests:

1. That in arranging section meetings, only such subjects be selected for discussion as will be of practical value from the standpoint of lowering infant mortality.

2. That the author of each paper be requested to present with his paper a summary which, if carrying recommendations, shall embody methods of procedure.

3. That the Chairman of each section prepare a summary of the transactions of his section, based upon the summaries of the individual papers.

4. That each Chairman present to the Committee on Review within sixty days after the Annual Meeting, not only his final summary, but also the summary of the individual papers, together with a workable method of carrying into effect any suggestions derived from the summary of his section.

S. McC. Hamill, M. D., *Chairman*
Albert Cross, *Secretary*
S. Josephine Baker, M. D.
L. Emmett Holt, M. D.
Elisabeth Shaver, R. N.
Philip Van Ingen, M. D.
Borden S. Veeder, M. D.

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THE PRESIDENTIAL ADDRESS

DR. S. McC. HAMILL, Philadelphia

When any great calamity happens, resulting in loss of human life—such as the sinking of the Titanic—the entire world is shocked; the newspapers record the fact in glaring headlines and discuss its various features extensively for days or weeks. The individuals responsible for its occurrence are bitterly condemned and held legally accountable.

The occurrence of an equally large number of preventable deaths of infants every day in the year makes no impression upon the minds of men. The great army of individuals responsible for this stupendous calamity are not even thought of, much less brought to justice.

You know the glory that attaches to the individual who chances to rescue a helpless child from impending death. Did you ever hear any one glorify the institution that contributes annually to the saving of hundreds of infants' lives?

Neither the wanton destruction of human life revealed in the figures reciting the preventable deaths in infants, nor the saving of infants' lives makes more than a passing impression upon the mind of the average man, while the spectacular sinking of a great ocean liner with its load of human freight, or the daring rescue of a single life rivets his attention and appeals to his imagination.

The dying child and the prevention and cure of disease are a part of the unheralded proceedings of every day; the sinking ship and the rescue of the little child are unusual, striking, and easily visualized.

Were it possible to place the facts regarding the preventable infant death rate or the methods by which these deaths may be prevented, before the public, in the same spectacular way that it is given the news of a great disaster, there might be some hope of centering the attention of the public upon the crime and its cure.

Unfortunately this seems impossible, at least there has not developed up to the present time any way of visualizing this subject which has proven effective to this end.

It is a tragedy that there should live at the present day men who believe that organizations such as ours are running counter to

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the interests of mankind in attempting to save the lives of helpless infants, or, as they express it, to save the weak and decrepit to become a burden to the family and the state.

Such individuals are ignorant of the facts. They do not realize that for every child that dies there are probably four that sicken but survive and bear with them through months and years, or even life, the effects of their sufferings—who in reality do become a burden to their families and to the state; they do not understand that to prevent death means to prevent disease; they do not appreciate the economic value of these lives to the state, a fact which is receiving the earnest consideration of nearly all of the great nations of the earth; the moral aspect of the question does not interest them; and they are immune to the appeal of the helpless bit of humanity suffering not as a result of any inherent weakness or any fault of its own, but rather as a result of the ignorance, avarice and selfishness of adult man.

I have often wondered what would be the act of a man who holds such views if, standing on the banks of a raging river, he should see the most helpless specimen of infant life on the verge of falling in to certain death. Would he with folded arms and a satisfied conscience stand idly by and watch that infant drown? The chances are that he would risk—if need be, sacrifice—his life to save that single soul.

Fortunately for the good of the world there are relatively few who are definitely opposed to saving the lives of babies, but there is a vast number whose interest in this subject has yet to be aroused. Indeed, as compared with the population of any large city, the total number of individuals contributing either of their means or service to the reduction of infant mortality or any other health or social problem is pathetically small.

If one studies the subscription lists of the various private charitable agencies, or the lists of the officers and directors of these institutions, it will be seen that the financial support and the direction of their work fall upon the shoulders of a very few. If one still further dissects them and inquires into the spirit that prompts the support that is given, it will be found that the number of those who are contributing with knowledge of the aims and methods of these organizations or directing them actively and intelligently, is exceedingly small.

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It is unreasonable to assume that the great number of uninterested fail to do their share because of any lack of desire to render a service to humanity. There must be some other reason and in all likelihood the reasons are many. The very remarkable commercial prosperity which has prevailed in this country in recent years, the keen competition in money getting, the rapid accumulation of wealth, the falling of fortunes into the hands of those unaccustomed by education or association to the use of money, and the influence of these things upon the masses, have led to extravagant methods of living, and to a love of pleasure and a passion for the money to attain it.

These results have had a very detrimental effect upon the development of the intellectual and spiritual side of men. Men have come to think in terms of business and pleasure. They have developed a spirit of selfishness and have in large part lost sight of their relationship and duty to their fellow men.

Hidden in the inner consciousness of every apparently indifferent individual there is a sympathetic chord, which, if intelligently touched, will respond. The task that is before us is the attuning of these individuals, for our success depends upon our ability to harmonize the public with our cause.

The American Association for Study and Prevention of Infant Mortality has accomplished much in the seven years of its existence. Its meetings have been held in different centers of population, its contributions have covered every field of endeavor along the lines of saving infant life. Its published Transactions, which, as Dr. Holt has aptly said, constitute the most valuable year book of infant welfare work, have been distributed throughout the length and breadth of the land.

All of this has been splendid work and very helpful, but has it accomplished what it should in the way of awakening the public conscience? Has it carried a message to the great mass of the indifferent and unenlightened? Has it provided them with definite evidence that we are really accomplishing something in the prevention of infant mortality and the reduction of disease?

It would seem that the answer to these questions is given in the figures representing the membership of the Association. The Transactions for the year 1915 show that in the first six years of our

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existence, the only national organization having as its sole purpose the study and prevention of infant mortality, one of the most important problems of the nation, has been able to interest but 17 individuals to the extent of contributing $200 for life membership; 12 to the extent of contributing $25 annually; 41 to the extent of contributing $10 annually; and 624 to the extent of contributing $3 annually. Since the end of our first year and up to the publication of our last annual report, there has been a net increase of but 170 in the active membership of the Association, and 79 in its affiliated society membership.

It seems incredible that an organization with the aims and purposes of ours should receive such limited support. If, in addition to telling the public the importance of conserving the lives and health of infants, we could present concrete evidence that we are accomplishing definite results along these lines, it is impossible to believe that there are not 100,000 men and women who would gladly contribute the paltry sum of $3 annually to the furtherance of the great work upon which we are engaged. If our program was as broad as it should be and we were accomplishing all that we should, membership in this association would be an absolute necessity to every private agency of this country, however remotely it may be interested in health work.

Combined effort is more effective than the effort of the individual.

I have long been a firm believer in the power of our affiliated society membership which is drawn from 31 states and 75 cities. Because of their ability to do and their widespread distribution, I believe that we should devote much of our attention to aiding these organizations to become as highly efficient as possiblle. That they need our assistance is most likely. My experience with private agencies in which I have held membership—and I believe it has probably been the experience of many of us—is that they fail to secure the confidence and support of the communities in which they work, because of the lack of a definite program and inefficient organization.

Doubtless all of us have run amuck of the sneering attitude of the thoughtful business man toward such institutions. Doubtless, also, the criticisms he has made have seemed to us eminently justified.

A definite program, an *efficient organization* and a *knowledge of its functions are fundamental* in *every private agency.*

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Before considering what I believe to be the proper procedure in organizing private agencies and making some reference to their functions, I wish to answer a criticism which one sometimes meets; namely, that because there exist national, state and municipal departments whose function is to care for the health of the public, the private health agency is not a necessity. Theoretically, this criticism is sound; practically, however, lack of a satisfactory budget and, frequently, inefficient organization, make it impossible for municipal health departments to do one-half of the work that they should do. Even if all necessary health work was taken care of, there would still be a place for the privately supported health agency, as will be shown later.

Let us now return to the consideration of the organization and function of the private agency.

I have already said that our Association has apparently failed in securing the fullest measure of public endorsement. Any institution working in the interest of the public must have the public's support and its success will be measured in part by the extent to which it is obtained. It therefore becomes the first duty of the private agency to plan to secure the confidence and support of the community in which it acts.

Public confidence may not be acquired immediately, but a long step will be taken toward securing it if the forming agency presents to the public a clear statement of its function, a definite, practical and intelligent program with an outline of the method by which the program is to be carried out, with a statement of cost, and a business-like, efficient plan of organization. The public then has something by which to determine the probable value and measure the future development of the organization, an accurate statement of whose accomplishments must be presented from time to time through the public press, occasional bulletins and a brief annual report.

Every privately supported organization, which is efficient, realizes the necessity of having an annual outside audit of its finances. *How many organizations, however, have ever thought it necessary to have an outside audit of work done as compared with money spent?*

If the public has a right to have an intelligent examination made of the amount of money expended and the way in which it is spent, why should not the public have a right to demand a disinterested investigation of work done?

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Public support *must rest* upon the intelligence of the plan and the knowledge of work done.

Organization

Every privately supported agency must have a governing body. The principal duties of this governing body should be to select the executive officer, to finance the organization, and to pass upon questions of policy.

The ideas to be developed and the method of applying them should be supplied by the executive officer and the various working committees.

In selecting the directors or managers it is absolutely essential that there be a large enough representation of capable business and professional men to insure business procedure in the conduct of the agency; but above all things, it should be a pre-requisite of every director or manager that he be sincerely interested in the problems of the organization and *willing* to *give time, thought* and *service* to the cause for which it is working.

It is important also to consider whether the nature of his business or profession may not have given him special training that will be of value to the agency. For instance, there are certain business men possessed of a genius for organization. The value of such men as members of a board of directors is manifest.

Publicity is necessary to every agency. Advertising is an art and to be effective must be done by men of experience. There are men in the advertising business whose skill and judgment must prove valuable to any agency.

The same is true of the lawyer who has special knowledge of health laws or who is experienced in legislative procedure; or of the physician who has been associated with municipal or state health departments or actively interested in public health problems. They all have special knowledge of great value.

There should of course be representation on the board of directors from those who are actually carrying out the work of the organization, who with the executive officer, should keep the board in touch with the progress of the work being done and submit for their consideration and judgment the work which it is proposed to do.

The success of any organization, I care not what its function, *depends more upon the person chosen as its executive officer than upon*

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any other one factor, since the contacts with the public are largely through him, and the public's impression of the institution represented will be largely determined by his ability and personality. He should be a man with a broad preliminary education—a man of education and experience in some form of social work; he should be possessed of rational ideas and ideals and have the ability to present things clearly and forcibly and enough experience in human intercourse to enable him to meet any man or woman on even terms.

He should be chosen not on the basis of written endorsements, but after a careful investigation of the work he has done, a thorough, direct study of the individual, and his fitness to meet the specific needs of the locality in which he is to work.

Having organized the directing body and chosen the executive officer the *entire work of the organization must not be relegated to the executive officer and his office staff,* as is too often done.

There is a large group of individuals in every community interested in the public welfare and in this group there will be many who desire to render some actual service to that community—men and women who are merely waiting to be guided. This group should be embodied in the membership of the agency and chosen only after a definite promise to work in the cause which the agency represents. One should include in this membership, also, and classify as volunteer workers, men and women who are in administrative or official positions so that they may have full knowledge of the aims, purposes and methods of the agency, as a result of which their co-operation can be secured in furthering its endeavors.

Any private agency that hopes to succeed, should use every available volunteer—man, woman or child—that can give something, it matters not how little.

These volunteer workers are not of course qualified to do all kinds of work, but each of them may possess some special ability—which often can be provided by them only and which no social or health agency could possibly afford to buy.

The common cause of failure to use the volunteer satisfactorily is that his special qualifications are not recognized or utilized. He is asked to do that which he is neither interested in nor capable of doing.

One can readily see how fatal it would be to ask a medical man to interest himself in the legal phase of some question or to expect a

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lawyer to be interested in social case work, and yet the service that either the physician or the lawyer can render to any social or health agency is indispensable.

The problems of the child, especially the city child, are so complex that they offer broad opportunity for service for the volunteer.

Indeed, the agency that does not use the volunteer worker, it matters not how special its function, cannot more than touch the surface of its problem. If, however, it can command the services of a few broadly and specially trained lawyers, business men and physicians, as well as a group of lay men and women of education and intelligence and the will to do, there is no limit to that which it can accomplish.

In this group, those of special training and ability should comprise the membership of the active committees, and with the executive officer should plan and direct the work of the agency, and the others share in the carrying out of the work.

Special training in sociology is not essential for the carrying out of social work, as will be shown later by some illustrations. Special training is essential only in its direction. *Interest in one's fellowmen* and *the desire* and *ability to do, coupled with some common sense*—an essential to success in every work in life—*are the only requirements needed in the volunteer.*

There is no limit to the number of volunteers that can be secured by the private agency provided the volunteer can be shown that there is work for him to do that he is capable of doing, and there is no limit to the number that can be used if the agency has carefully studied the ramifications of its own problems.

One of the principal features of this volunteer system is its educational value. It is a great thing for the individual to be awakened to the wants and sufferings of his fellowmen and to be shown that he can contribute something to their alleviation; and it is a great thing for the cause of humanity that men and women of the rank and file should become workers in this cause. In the past men have chosen the easiest way to settle their obligations to their fellowmen. It is within our power to make their contributions full of meaning and a real service to their fellowmen and to their Creator.

Many—perhaps one may safely say most—private agencies depend upon paid workers for practically all of the work that they do. The limit of their usefulness, therefore, depends upon the number and

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ability of workers they employ. The amount that can be accomplished along special lines at practically no expense, through the medium of volunteer workers, is remarkable. A very excellent example was the establishment of instruction in the care of babies in the elementary public schools of Philadelphia by The Child Federation. This is the plan that was followed: Forty young women—the majority of them college women, volunteered to teach twenty Little Mothers' League Classes in twenty public schools. Six physicians and one superintendent of an infant hospital, all specially qualified, volunteered to outline the courses and give the necessary talks and demonstrations to the teachers. The only expense connected with this work was the purchase of the equipment for demonstration. The money for the defraying of this expense was contributed by an interested member of the Federation.

This is also a splendid example of the *effectiveness* of volunteer work. At the end of the first year nineteen of the twenty principals of the schools in which these volunteer classes were taught, appealed to the Board of Education to establish this kind of instruction in the schools as a part of the regular curriculum. After careful consideration and investigation the Board adopted the idea and instruction in the care of babies is a fixture in the curriculum of the elementary public schools of Philadelphia today.

Financing

The financing of charitable organizations has always been difficult. Every agency has definite, justifiable overhead expenses, such as salaries, office rent, stationery, etc. In some this overhead necessarily eats up a large amount of the contributions. This fact has been a great obstacle in securing funds, as many contributors will not give money for the paying of office rent, salaries, etc. In most agencies this difficulty can and should be met in the plan of organization by the preparation of an accurate budget of the overhead expenses, the money for which can be readily secured from a group of business men because of their realization of the necessity for administration expenses. This leaves the agency free to assure the contributor that 100 cents of every dollar contributed to any of its activities will be applied to that activity. This plan is particularly applicable to agencies doing infant mortality work.

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Every social agency is fundamentally a health agency, and should contribute to the maintenance of the public health. Every agency whether specifically established for health work or not, should be closely affiliated with the department of health and all other municipal departments having to do with the city's health. The *attitude* of *most agencies towards city departments, unfortunately, has been that of the critic who is eager to ferret out flaws and condemn without full knowledge.*

Please do not believe that I discountenance criticism, but *criticism should be based upon a full knowledge of the facts and should be constructive and helpful.* Destructive criticism usually does more harm to the individual or agency that makes it than to the person or institution criticised.

The private agency, therefore, should not criticise in this sense, nor should it try to dictate. The wise health officer is glad to accept advice and help from anyone qualified to give it, but he must not be criticised if he fails to follow the *advice* that is given. There may be very excellent reasons why he does not and such criticism may bar the way to future co-operation.

Assuming that the health department is so well manned that it needs no advice as to its routine procedure, there still remain ways in which the private agency may be helpful. Health department budgets are not as a rule so large as to justify expensive experimental work. Here is a splendid opportunity for the private agency to develop and try out ideas that may prove of value in the maintenance of the city's health.

If such public demonstration shows these ideas of real value they will not only be desired by the department head, but he will be possessed of evidence with which he can reasonably appeal to the governing municipal bodies for an increased appropriation to carry on the work. Many private agencies have rendered most valuable assistance by such demonstration. For instance, the visiting nurse idea, the milk station, health centers and little mothers' leagues, have all been tried out by private agencies before adoption in the city's program.

A very helpful contribution may be made also by the private agency in moulding public opinion in regard to health matters through the medium of the public press, lectures, literature and exhibits. The great public is woefully ignorant of the laws. They do not know what

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they have a right to demand of the city or the state, nor what the city and state have a right to expect of them. If laws are to be lived up to they must be known and any organization interested in the public health should contribute to the health education of the people.

Another great opportunity is offered the private agency in the studying of conditions affecting the welfare of the child, and studies of this character have been made without end. The problem of the child and the present methods of meeting them have been investigated until the word investigation has become a nightmare in the minds of many. Most of these investigations have been an absolute waste of time and money because the methods which have been followed in making them —usually a questionnaire formulated by a committee secretary and answered by the paid officer of the institution or object investigated, have been defective.

In way of illustration: I was once a member of a committee to study the problems of the dependent child. I was never invited to a committee meeting. Some months after the committee had been organized, I received from the chairman a voluminous report of the whole situation, based upon a questionnaire formulated by a paid secretary, and addressed to Boards of Managers of existing institutions, and to individuals who were thought to possess special knowledge.

Reports obtained in such manner are unreliable and a menace to the cause which they are supposed to help.

Before any investigation is ever begun, its necessity must be proven. If undertaken, to make the results of value, they must be founded on firsthand information. Even then the investigation is useless unless any discovered defects in the existing system are met by a carefully thought out constructive program.

But the end is not here. Such constructive program is still valueless unless put into operation. Therefore, the final act of any investigation should be the rendering of every possible assistance in the carrying out of any necessary corrective procedure.

Any agency in order to be successful, must at times conceal its part in work that is being done. It *must not feel that it is to be credited with every valuable suggestion or program that it offers to another agency or a city department.* Most of the constructive work that may result from such suggestions could never be carried out by the agency itself, and it certainly never will be carried out if recog-

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nition of its authorship is demanded. The *agency—as the individual—must bury its personality, must think of the good that can be accomplished by work based upon its suggestions and accept the results of such work as its reward.*

I have implied that our greatest opportunity for service is through the medium of our affiliated society membership. I have said that the evidence seems to indicate that many private agencies lack a definite program and efficient organization. I have offered some suggestions as to organization, which might be of universal application, and have discussed some procedures which might be followed by any agency. I have also said that I believed that our Association should devote much of its attention to aiding the agencies represented by our affiliated membership, to become as highly efficient as possible.

In what way can we accomplish this last point most effectively?

While self-criticism may be disagreeable when publicly stated, what I am about to say may be justly said of any national organization whose principal activities are the holding of an annual session and the publication of transactions. Both the annual session and the annual transactions are valuable, but it has long seemed to me that they fail to accomplish what they should and would if the programs were prepared with the understanding that their contributions were to be carefully reviewed and summarized after the meeting, with a view to extracting from them the practical points which they contain, and formulating them in such way as to make them of actual working value to private agencies, public health departments and individuals throughout the length and breadth of the land.

It would probably be a wise procedure to put the results of such a review into a definite program addressed to the type of agency best qualified to carry it out. Think for a moment what a tremendous service we could render the cause of rural nursing if out of the transactions of yesterday's very successful session on rural nursing we could prepare a definite workable program to be presented to agencies interested in this phase of our work.

Have you ever gone away from a meeting such as ours with all its splendid material, and asked yourself the question—What have I profited by coming here? A few points have fixed themselves in your memory and you promise yourself that you will have early recourse to the

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transactions for their elaboration and the proper method of applying them.

When the transactions finally come to you in the midst of your already over-crowded life, and you find that the story embodying the ideas that have impressed you is a long one, or that in the telling of it much is lacking to show the way to their practical application—have you sometimes not longed for some brief workable presentation of the theme that has interested you ?

The preparation of such a program and its publication in the transactions of the Association would prove of inestimable value.

The carrying out of such a scheme by our Association should be relatively easy. Each section is directed by a committee. Following each meeting this committee should carefully review the work of its section, select the material that is of practical working value, and submit its results to a general committee for final criticism and formulation.

In order to conduct this work effectively and do certain other things which I am about to suggest, it would be necessary to increase our working force by the employment of a special secretary. This committee of final review should work through such a secretary.

The next step I would suggest would be the establishment of a Bureau of Help in the offices of the Association.

The possibilities of such a Bureau have been borne in upon me during the year that I have been the President of this Association by the number of appeals I have received from organizations already active and individuals desiring to form organizations, for advice as to programs for work and methods of organization.

In the last few years I have been a member of a local agency that has volunteered to give advice along these very lines. As an outcome of advice given locally we have been asked for and have provided health programs for organizations in forty cities and towns throughout the country. Without any attempt to work other than locally, we have had this widespread appeal, which demonstrates most clearly the demand for this kind of assistance.

If such a Bureau were provided it should be placed first and foremost at the service of our affiliated societies for advice covering matters of organization, finance, program, or any other points that might be presented. Such a Bureau should also publish frequent bulletins

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containing useful information and constructive advice. The value of such a Bureau under the supervision of a group of the most eminently qualified sociologists, sanitarians and physicians, chosen from our own membership—men who I believe would be willing to give the necessary time and service—and directed by a full-time secretary, would in my opinion do more for the prevention of infant mortality and to increase the respect in which our Association is held than any other one thing that we could do.

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OBSTETRICS

Thursday, October 19, 1916, 9.30–11.30 a. m.

COMMITTEE

Chairman

DR. A. B. EMMONS, 2nd, Boston

Secretary

MRS. MAX WEST, Children's Bureau, Washington

Miss Minnie H. Ahrens, Chicago
Dr. Adelaide Brown, San Francisco
Dr. W. W. Chipman, Montreal, Canada
Dr. Walter G. Darling, Milwaukee
Miss Edna Foley, Chicago
Dr. Gavin Fulton, Louisville
Miss Edna Henry, Indianapolis
Dr. James L. Huntington, Boston
Dr. F. W. Lynch, San Francisco
Dr. John F. Moran, Washington, D. C.
Dr. Reuben Peterson, Ann Arbor
Mrs. Wm. Lowell Putnam, Boston
Miss Elisabeth Shaver, Louisville
Dr. Mary Sherwood, Baltimore
Dr. J. Morris Slemons, New Haven
Dr. Henry Schwarz, St. Louis
Dr. George W. Webster, Chicago
Dr. J. Whitridge Williams, Baltimore
Dr. C. E. Ziegler, Pittsburgh

SUB-COMMITTEES

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Dr. W. W. Chipman, Chairman,

New England
Dr. Robert L. DeNormandie, Chairman,

New York and New Jersey
Dr. George W. Kosmak, Chairman,

Pennsylvania and Delaware
Dr. C. E. Ziegler, Chairman,

Maryland
Dr. Lilian Welsh, Chairman,

Kentucky
Dr. Gavin Fulton, Chairman,

District of Columbia and Southern States
Dr. John L. Norris, Chairman,

Louisiana
Dr. T. W. Newman, Chairman,

Indiana
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Minnesota
Dr. F. E. Leavitt, Chairman,

West Virginia
Dr. J. E. Cannaday, Chairman,

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OBSTETRICS

A Brief Review and A Look to the Future

Address by the Chairman, A. B. EMMONS, 2nd, M. D., Boston

Villiers-le-Duc, a rural commune of the French Midi, from 1893 to 1903 had an infant mortality of zero, and no maternal death due to childbirth. During fifteen years but one stillbirth occurred. This report has been confirmed by the French Academy of Medicine.

Before this association was born, the mayor of that town obtained a perfect score. His methods were direct, thorough and complete. The striking feature is administrative authority combined with medical knowledge, resulting in all measures of safety being thoroughly carried out in all cases, without exception.

Before referring to these measures more in detail, I wish briefly to review what this association so far has done to obtain for the women of this country better obstetrical service. Then to suggest what is left to be done in the future.

Infant mortality statistics give prenatal and obstetric care the responsibility of about 40 per cent of infant deaths, that is, deaths in the first months, and show that this per cent is rising and the actual number increasing. Add to this the stillbirth rate and reduced infant vitality, also the maternal morbidity and mortality of childbirth, we then see the whole responsibility of obstetrics. Child-bearing may, therefore, be defined as a normal function dangerous to public health. In what other field of public health work today is there opportunity of saving more lives or preserving more health?

Evidently the public is not yet aroused to the importance of this critical period of human life. To arouse them to action is our specific task.

The task this voluntary association has undertaken is not only to collect evidence of unsatisfactory conditions, but to discuss and define standards and methods best suited to aid in the successful bearing and rearing of families to healthy childhood and motherhood. This we have already done in almost every phase of the subject.

Our Transactions catalogue the facts in 35 papers with important discussions bearing directly on obstetrics, many sub-committee investi-

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Thus we have learned that the condition of obstetric practice in this gations, and reports of the experiences of the 151 affiliated societies. country today is briefly as follows:

1. A large number of medical schools with obstetric departments, of which a few are good, some fair, and many poor. The professors ill-equipped, turning out many graduates with little or no training in obstetrics. The schools are improving a little but slowly.

2. The family physician in general clings to even the difficult cases in obstetrics with a jealous tenacity. He rarely calls in expert assistance, reasoning that if midwives can care for such cases, certainly he can. Seldom does he examine intelligently his patients during pregnancy to obtain accurate obstetric facts, which might reassure him in the subsequent care and confinement and be a great safety to his patients.

3. The fee in private practice ranges from $7 or less to $25 and more, seldom, except in large cities, a fee adequate to the worth ot even fair service. It pays the doctor more money today to repair the results of bad obstetrics than to prevent such results.

4. Each large city and state has different laws and customs in regard to the midwife, resulting in a chaotic state of the practice of obstetrics throughout this country, ranging from unrestricted license, simple registration, education and supervision to the point of police control, or, on the other hand, to non-recognition, like any other unqualified person, as in Massachusetts.

5. We have learned that large cities present different obstetric problems from each other, from small cities, towns and rural districts.

6. The larger part of the public and many physicians consider childbirth a simple normal function and, therefore, often unknowingly take risks no good farmer would take with his live stock.

7. Life insurance companies refuse to insure pregnant women. The unborn child is a risk that would shock an insurance medical director.

8. The medical profession, who might successfully lead to a rapid solution of the problem, is, I regret to say, ununited in any constructive effort to improve the situation.

Actual results of the work of this association cannot easily be totaled. Such results are largely accomplished by the *members individually*. The inspiration to one attending a meeting has many times

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resulted in formulating work of a progressive and extensive nature for his or her city or town, bringing enormous saving of waste in maternal and child life and health.

As a result of these meetings our minds have been cleared, our courage renewed, and our patience reinforced to meet the difficult problems of child welfare.

The Future

In formulating a program for this meeting, a letter was written to each of those who now compose the obstetric committee with the request for suggestions of what they considered was most needed to obtain "Better Obstetrics."

I propose now to give the suggestions thus received and beg that you will consider them seriously with the idea of selecting the most hopeful for a program for next year.

1. Dr. Kosmak suggested "Obstetric Nursing" as a topic for future study.

2. He also suggested a report on the *improvement of obstetric teaching* to determine if progress had been made since Williams' notable investigation showed the lack of good teaching to be our fundamental difficulty toward "Better Obstetrics" in this country.

3. Dr. Williams replied to my inquiry that with three exceptions very little has been done to improve the teaching of obstetrics since 1912. The three improvements he mentioned are:

1. The opening of the Magee Hospital in Pittsburgh.
2. The union of obstetrics and gynecology, and placing the combined department upon a full-time basis at Yale.
3. The building of a woman's clinic and the placing of the joint departments of obstetrics and gynecology upon a full-time basis at the University of California.

"Possibly there might be added to these," Dr. Williams continues, "the partial completion of the new Lying-In Hospital in connection with De Lee's work in Chicago." I wish to add that in many general hospitals pavilions or wards have been added recently for obstetric cases.

4. The *standardization of hospital treatment* of obstetric patients was suggested by Miss Ellen C. Babbitt and Dr. Williams. They think that if cases were kept under observation more than ten to fourteen days, there would be more breast feeding and less babies would enter foundling hospitals.

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5. Along the same line Miss Edna Foley, of the Visiting Nurse Association of Chicago, writes:

"Can some one discuss the subject, '*A Minimum Standard of Better Obstetrics?*' How may it be obtained in small hospitals? Will state or local inspection of each baby born bring us to this standard more quickly than more adequate teaching in medical schools? Unfortunately, there are a great many poor medical schools and poor hospitals that can only be brought to a good minimum standard by state control.

6. "To get inspection of each new-born baby is, of course, another way of saying—complete birth registration—but it would do more than this, it would find the bad eyes, the poorly delivered children, and the septic mothers far better than they are being discovered today. I sometimes think that only undertakers and district nurses in our sort of work discover these conditions, and we, unfortunately, have no redress unless we suspect malpractice, and even then we must be very sure of our ground or we receive scant sympathy when we report the case.

"A minimum standard of better obstetrics, enforced by state or local health department with inspection of every baby born, would help a lot in our large cities, as well as in our rural districts. Perhaps this subject is too large an order for the next conference. It is, however, one of the crying needs in district work, and I hope that some day it may be discussed nationally, and locally as well."

7. Mrs. West, of the Children's Bureau, writes as follows:

"Certainly a woman who gives a child to the country has an *inherent right to the best care* that can be given, and we should be fighting for the establishment of this right. We should in a spirit of great sympathy educate mothers and fathers in what is meant by the term 'good obstetrics' and endeavor to offer the best possible service to this righteous demand."

8. Miss Minnie H. Ahrens, superintendent of the Infant Welfare Association of Chicago, in reply to my question "how to awaken the public to the need of *better obstetrics* and what this may accomplish," suggests that the different cities interested in infant welfare form *committees* of *lay women* to study and solve this problem locally. She believes this would create the desired public opinion better than could be done by professional people.

9. Dr. J. F. Moran, of Washington, reiterates the medical profession's oft-repeated solution of the difficulties as follows:

"Education and legislative control are essential. Education of the physician to do better obstetrics, and education of the laity to the need of prenatal care, as well as at the time of labor.

"The only way to do away with the midwives is by legislation and it is useless to expect to obtain this until the profession provides competent attendants to take their place."

10. Dr. Peterson gives a similar professional view of the situation in his state as follows:

"In a state like Michigan the principal reason for poor obstetrics is that the practitioners from time immemorial have preached that pregnancy, labor and the puerperium are physiologic conditions. The public naturally concludes that

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if that be so they should not be paid for. What is not paid for is poorly done. This part of the practice is neglected for something else that pays better. In this part of the community the people would pay more attention to obstetric needs and take better care of themselves, if they paid their doctors better prices.

"The rural baby in Michigan is delivered by the doctor who only sees the patient once afterwards unless there be complications. In the larger cities, I imagine, the poor people are being better and better taken care of through local charities."

11. "It seems to me that we should urge the necessity of state laws compelling physicians to record miscarriages and stillbirths. This certainly would help us a great deal in our work. Poor prenatal care and ignorance on the part of the expectant mother is responsible for a great deal of miscarriage. The registering would aid greatly in determining the causes."

12. Dr. Schwarz, of St. Louis, writes the following:

"In St. Louis, obstetrical conditions are not bad, but of course, there is plenty of room for improvement. Washington University Medical School conducts a sort of model plant for the very work which your society tries to improve. We are not able to take care of the entire city nor do we desire to do so. We expect other agencies and especially the *city* to *imitate* and *improve our work* and make it cover the whole community.

"An obstetrical dispensary which is well patronized is carried on in my department, in first-class quarters, with a competent staff of physicians, prenatal nurses and social service workers. The expectant mothers are delivered at their homes if these homes are suitable and if there are no serious complications; otherwise, the cases are transferred to my obstetrical wards on the medical campus; after delivery the patients receive medical and nursing care. When they are finally discharged, the babies are automatically transferred to a babies' clinic, formerly to our dispensary for children, now to a clinic for well babies. For years over 90 per cent of our babies have been breast fed."

13. "Counties must put up hospitals as they put up school houses. To these the rural expectant mothers can go for delivery with the same satisfaction of exercising their good right as they have when using public schools.

"The county must furnish the nurses. I am establishing a six months' course for registered nurses which shall qualify them to do obstetrical work within certain limitations."

Dr. J. Morris Slemons, of New Haven, writes:

"One of the greatest opportunities for reform lies in the field of out-patient obstetrical service. In most medical schools this service is very loosely handled; students are allowed to treat cases more or less as they please; they get into bad habits and these become lifelong. What we need is to have the out-patient service under the direction of one of the hospital staff and every case should be attended not by a student alone but also by a doctor and a nurse. This would go far to raise the dignity of obstetrical work in the eyes of the students, and what is more important would result in their learning better methods and in the patients receiving better treatment."

In the London Lancet, April 22, 29, and May 6, 1916, the Milroy lectures on "Infantile Mortality," by Moore, describe, among other interesting things, the methods and results employed by Dr. Morel, mayor of Villiers-le-Duc, by which methods the perfect results already referred to were obtained.

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To those of us who had already despaired of perfection in this life this story may revive hope. Certainly the methods should command our respect and close study. Many desirable details are lacking in the brief reports, but the chief facts are as follows:

The mayor of the town, M. Morel, took a deep interest in infant mortality and its problems. In order to satisfy this interest, he studied medicine, taking a medical degree. He formulated regulations of which the following are to us the most interesting:

1. Every expectant mother has the right to require the help of the village authorities.

2. In order to get this help she must declare her condition of pregnancy at the mayor's office before the seventh month and select a midwife to attend her. The midwife must visit and examine her and exclude albuminuria, contractions of the pelvis, and dangerous presentations, for which the midwife is paid five francs from the Free Medical Aid Fund.

3. If abnormal, a medical man of her own selection is called to treat and deliver her successfully and paid from the same fund.

4. If labor is not ended in twenty-four hours, the midwife must call a doctor.

5. Every woman so assisted shall have a grant, about $2.50 per day, for six days, if she remains in bed, paid from the fund after the six days.

6. Every partly or entirely bottle-fed baby must have milk sterilized and must follow written directions of care. Inspection by doctors is provided in all such cases.

7. Every infant placed out is weighed every two weeks on the *communal baby-weighing machine.*

8. Every nursed or bottle-fed child getting sick must be notified to the municipality within forty-eight hours from first symptoms.

9. Every wet-nurse bringing up a child to one year in good health has a right to a grant of fifty cents per month dating from the time she nursed the child to one year.

Moore, from the point of view of a health officer, who has tried with some success to reduce infant mortality in Huddersfield, England, makes the following critical comments:

The chief factor of success in Villiers-le-Duc was the absolute *unity* of administrative authority combined with medical knowledge.

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The next essential was *completeness,* in that it deals with *all* needy mothers and infants. The prospective mother was required to give *notice* of *pregnancy.* The people were not merely advised, but *ordered* to do certain *specific things.*

"It is worthy of note," adds Moore, "that in one of the most democratic countries in the world (France), a republic, whose watchwords include liberty and equality, these things are *ordered* to be done. That the orders were obeyed is vouched for by the results."

Moore's proposal in 1904 that pregnancies be notified to the authorities was met in England by some with ridicule. It was said this would "violate family privacy."

To which he answers: "It appears to be quite a commonsense thing that the state should concern itself with the welfare of the mothers of the race. It does not seem to me to be a very singular or extraordinary project that when a woman is about to become a mother the authorities should take notice of the fact, with a view of helping her and with a view of insuring that when her time of trial comes she shall have adequate assistance; that endeavors should be made beforehand to ascertain that all is well and to take what measures may be to remove dangers." In other words, to insure intelligent prenatal and obstetric care.

One of our speakers at the Boston meeting two years ago independently emphasized the value of *reporting pregnancies* to the health authorities as follows:

> "Is it not conceivable that some day we may advance to the point of civilization where notice of expected babies may be required by the health authorities in order that these authorities may receive assurance that reasonable provision is made for the safety of mother and baby, and that preventable danger to valuable citizens may, by appropriate means, be foreseen and avoided?"
>
> "Nowhere could the state or city spend money to better advantage than in safeguarding her mothers."

Moore incidentally makes one other interesting suggestion that every child in the elementary grade be taught a simple catechism of hygiene. He continues, "Is it not an astounding fact that though on the treatment of offspring depend their lives or death, and their moral welfare or ruin, yet not one word of instruction on the subject is ever given to those who by and by will be parents? Is it not monstrous that the fate of a new generation should be left to the chances of unreasoning custom, impulse and fancy?"

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Conclusion

The lines of future progress it seems to your chairman are these: In order to obtain effectiveness and completeness, I suggest the notification of pregnancies to the local health authority. These notifications should be treated confidentially and might at first be voluntary, but later should be required. This would furnish the necessary information to the health authorities, who should be required to determine that proper prenatal and safe obstetric care is assured to each prospective mother.

Greater publicity through committees of lay women seeking further extension of prenatal care.

Standardization of hospital obstetric care, establishing a minimum standard and ways to enforce at least that standard, by such means as inspection of each baby born.

To provide the means for better obstetrics, seek health insurance with maternity benefits.

Improve teaching of obstetrics both in the medical schools and in district work in the homes.

Develop further our methods and opportunities of teaching mothers and fathers the value of "better obstetrics," and the older children a health catechism.

While publicity is our chief weapon, we may as well face the fact that we shall not get much farther until we have the backing of authority. I, therefore, make the following proposal for next year's program:

Whereas pregnancy is a normal function proved dangerous to public health, and whereas the different branches of public health, federal, state, county and city, have already done much, in a few striking instances, to obtain better standards in obstetrics, we hereby invoke the aid of *all* public health agencies and officers universally to aid in this branch of preventive medicine.

I, therefore, suggest as a title for our next year's study "Public Health Authority and Better Obstetrics."

The Chairman: The next speaker is Dr. Grace L. Meigs, head of the Division of Child Hygiene of the Federal Children's Bureau, whom I now have great pleasure in introducing to you.

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RURAL OBSTETRICS

GRACE L. MEIGS, M. D., Children's Bureau, U. S. Department of Labor, Washington, D. C.

This society for six years has pointed out the importance to infant welfare of proper care for the mother before, at and after confinement. So far the discussions at these meetings have dealt largely with one side of the problem, the provision of better obstetrical care for mothers living in large or smaller cities. The other side of the problem—better obstetrics for the women living in rural districts—has not been fully discussed, though we have had frequent glimpses of it in the reports of sub-committees. This is natural. Most of the members of this society are doing their work in the larger cities and perhaps know little at first hand of rural conditions; moreover, it is quite plain from what knowledge we have that the difficulties in providing adequate care for women during pregnancy and labor are far greater in the country than in the large cities. Perhaps many of you would say frankly that you believe the problems of rural obstetrics at present cannot be solved.

If they were insoluble, it would be useless to discuss them. I do not believe that they are. I believe that the present great wave of interest in improving the conditions under which people in rural communities live and work will carry with it to success efforts put forth now to improve rural obstetrics. So I am glad that the committee decided this year, and here at a meeting in the Middle West, to discuss this subject.

In this paper I shall attempt only to open the subject for discussion to those who know more about it than I, by putting before you as clearly as I can, certain important phases of the problem as we are finding them in a study of maternal welfare in rural communities now being carried on by the Children's Bureau. I hope that from this discussion will develop definite plans and definite work.

The letters coming to the bureau, especially since the publication of Prenatal Care, have brought very clearly before our eyes the need of knowledge relating to the conditions under which women go through pregnancy and labor in the country. Women who have read Prenatal Care write to us with some bitterness asking us how they can carry out its advice; how they can have the advice of a doctor during pregnancy

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when the nearest doctor is forty miles away; how the wife of a farm laborer earning $1.50 a day on a ranch in the far West can have a doctor's care at confinement when such care cannot be procured for less than $30.00. The well known letters from farm women on their greatest needs written at his request to the Secretary of Agriculture[1] by women in different parts of the country, give the same evidence. The editor of these letters says "In many of the letters need for knowledge in cases of childbirth is strongly emphasized. * * * Apparently in many cases the life and health of the country mother and child depend largely on the experience or intelligence, or accidental medical skill of neighbors.* * * * Many writers, particularly those in the less thickly settled sections, complain bitterly of the large fees, up to $25, charged by physicians, and some frankly state medical and dental attention is beyond the average farmer's reach in these localities. * * * * There is in several letters a note of complaint that the Government in cases of hog cholera or other animal diseases stands ready to help them by advice, or to send a specialist to their assistance, but that where human life is concerned they have to take their chances and face illness and emergency in helpless ignorance."[1]

A woman from North Dakota writes: "The greatest need in our community, which is situated in prairie country, subjected to terrible blizzards, and with roads almost impassable or no roads at all, is rural nurses. Women on homesteads often die in childbirth * * * because of no doctor and no nurse. If the department could find a way to have a rural nurse system established it would be the best assistance for the women in this locality ever known, where we sometimes have to go 30 or 40 miles to a doctor, and by saving the lives of the women and children who could estimate the hundreds of thousands of lives saved to the nation?[2]

This year the bureau began to extend to rural districts the studies of infant welfare and mortality which so far we have carried on in cities such as Johnstown, Pa.; Manchester, N. H., and Baltimore, Md. This work gave us the opportunity to study conditions of maternal welfare in the country. Townships in southern and middle western states have been studied and the work is still being carried on.

The method used has been the same as that employed in the infant

[1] U. S. Dept. of Agr. Report No. 104. Domestic Needs of Farm Women, pp. 56-57.
[2] Supra cit. p. 62.

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mortality studies of the bureau; the agents visit each mother of a baby or child born during the period chosen, and gain from her information as to the conditions affecting her, her babies and older children. Practically a house-to-house study is made, and many babies are found whose births are not registered. I shall not speak here of the part of the study devoted to questions of infant and child welfare.

The information we secure about the mother can be divided roughly into the following groups: Relation of a woman's work in the house and on the farm to her pregnancy and confinement; prenatal care; obstetrical care; complications of the last pregnancy and confinement; previous maternity or pregnancy history; general health; and previous occupational history.

About the relation of her work in the house and on the farm to her confinement, we learn: What her usual duties are, and what help she had with these duties during her pregnancy and the year after her confinement; how long before confinement, and how soon after confinement she ceased and resumed each particular duty (e. g., washing, milking, loading hay, picking cotton, etc.); what extra help in her housework or other duties, either paid or unpaid, she had during confinement; how many people there are in the household; how many rooms there are in the house; what household conveniences she has, and especially how far she has to go for water; and so forth.

About prenatal care we get the following information: How often and in what months during pregnancy she saw the physician or midwife, and how often and when urinalysis was made; what physical examination was made; whether or not pelvic measurements were taken; whether she read any instructive literature on prenatal care or had any other prenatal care during pregnancy.

About obstetrical care we learn: The attendant at birth; the number of visits made by the attendant after confinement, the accessibility of medical service; whether a telephone is available to call a physician; how long the mother stayed in bed; what kind of nursing care she had and for what period; the kinds of services the nurse or person caring for her performed. In addition, we ask for details as to any complications of pregnancy and confinement.

About previous maternity or pregnancy history, we learn: The mother's age at marriage, and at each confinement; the period of gestation of each live or stillborn child or miscarriage; the attendant at birth in every case; and all the complications of confinements.

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As regards general health, we get from the mother a statement of all her illnesses, their duration and at what age they occurred.

About occupational history, we learn at what age the mother first went to work, and we get a statement about all the occupations she has had, between what ages she held them, and how long she worked at each.

In addition, the agents have tried to record any information, given by the mother, which may throw light on the subject of rural obstetrics.

The studies have been under the charge of two physicians, Dr. Frances Bradley and Dr. Florence Sherbon. The Departments of Health of the States where the work was done have given active co-operation. In planning the study we have had the greatest possible help from agricultural and home economics experts at the Department of Agriculture and the State Agricultural Schools, who, in their studies of farm problems, have seen the importance of the question of maternal and child welfare and are very glad to have such studies made.

The material from these studies has not yet been tabulated or analyzed and it will be, of course, impossible to present at this time any definite conclusions. When the bureau promised, last spring, to give at this meeting a report of progress on these studies, we realized that this would be the case. The method we have adopted in preparing this preliminary report has been to choose three townships, typical of different conditions, two in the Middle West and one in the South, and to present certain facts regarding prenatal and obstetrical care which are made plain by the interviews with fifty mothers in each township. You will readily understand that the figures which will be given are of tentative value only because they are so small. They are used mainly as a method of giving a picture of the conditions in the small areas covered.

Township A is in a north central state. Parts of this township have been settled for forty years, but part is still in the process of development from timber into farming country. In the stump land where the forest trees have been cut, but where the stumps are still in the ground, many of the settlers live in rough shacks or log cabins.

One of the agents writes: "It is still a common story for a young couple to buy eighty acres, of which little or none is "stumped," pay for it largely with a mortgage, build themselves a rough two-room

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shack out of lumber from their own trees, and move on to the "farm." During the first few years, the father often works out by the day during the summer, and works on his land in the winter, felling trees and pulling stumps. Gradually, as they get pasture and hayland, they develop a herd of dairy cattle, building at first a rough barn-shed for them. After a few years, perhaps five or ten, they build a good large barn. And in a few years, usually not many after this, they build themselves a well-built, well-finished, roomy house. But almost always the house comes after the barn, for it is said in this country that "the barn will build the house, but the house won't build the barn," a saying which seems economically sound. And all this time the couple is raising a family of children, not a small family either in most cases, but a healthy one; "never had a doctor in the house except when the babies were born" is a common report. The last stage in the evolution of the farm is usually the payment of the mortgage."

The soil is fertile, and the farmers manage to make a decent living from comparatively few acres of cleared land. It is a dairy district; the women help with the haymaking as well as the milking. The population is mainly of German descent. The township is reputed to be one of the most progressive in its county and has an active farmers' organization. No part of the township is much more than six miles from a doctor; telephones are common. There are no midwives practicing in the township. The nearest hospital is about 20 miles away. Almost all (48) of the fifty mothers interviewed, had been attended by a physician at their last confinement, one was attended by a neighbor, one by a midwife. This alone would seem a satisfactory showing; but less satisfactory are conditions of prenatal care and care during the puerperium. Only seven of the fifty mothers had any prenatal care by a physician, one visit being paid in each case; only three had a urinalysis, and in each of these cases only one examination was made. In one case only were pelvic measurements taken. It is interesting in connection with this general lack of prenatal care that a number of the fifty pregnancies were not normal. One woman, according to her own statement, had kidney trouble, another had oedema of the whole body and headache, and had had kidney trouble in a former pregnancy. Neither had any prenatal care.

As to the after care following confinement, in thirteen out of fifty cases the physician made no visit after confinement; in twenty-four

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only one visit was made. In a number of cases labor was complicated. Four babies were delivered with forceps. One of these four mothers had a constant hemorrhage following labor and died a day later. The baby was stillborn. No physician was called in consultation in this case. Five cases had hemorrhage more or less severe after labor. Three cases had adherent placentae, one of which had to be removed under chloroform. One woman had fever on the third day which she ascribed to "being tired out with company"; another had an infected breast; another a milk leg from which she suffered for nine weeks. These cases show how incomplete a picture is given by a death rate. Far more important as showing the result of obstetrical care is the number of women made invalids for a shorter or longer time. As to nursing care, no mother had a trained nurse at confinement, seven had a practical nurse, twenty-five had a relative or friend who stayed during the lying-in period, and in thirteen cases a neighbor or friend came in regularly.

It would seem then that in this progressive and prosperous community some advance has been made in that medical attendance at confinement is the rule; but evidently much is still unsatisfactory. That most women have no prenatal care even in complicated cases, that none have trained nursing assistance at confinement, that hospital care of complicated cases is unknown, and that medical supervision after confinement is rare, point to the fact that the necessity of such care is not realized.

Many of the women in this community took women's magazines, had read articles on the care of the baby and were eager to learn more. The prospects are bright for improvement in a community such as this, which may, perhaps, be considered as typical of many townships in the Middle West.

Township B, also in a state in the Middle West shows two different conditions. About one-half adjoins a progressive small city from which a doctor can easily be called for confinement and usually is. The remainder of the township is wild country; much of it is uninhabited, or broken only by isolated clearings. The people live here under practically pioneer conditions. This district is eight to twenty miles from a town and a hospital; it has no railroad, no mail delivery and few telephones. The people here, too, are mainly of German descent. The chief industry is dairying. Most of the women, especially on the newer

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farms, do hard farm work. Many women stopped their haying, loading and stacking, or other heavy work to talk to the agents.

In the wilder part of the township families get on throughout their whole history with few visits from the doctor. He is rarely called to give confinement care. Farmers' wives, who have acquired more or less experience in such cases, attend most of the confinements. They may be called neighborhood midwives, though all are unregistered, most are without training, and none make any charge for their services. Their patients give them a present of $2.00 or $3.00 for their help.

One of the women who attends all her neighbors as well as her numerous grandchildren had training as a midwife abroad. She now does not wish to continue the work, and does not wish to renew her license. She and her husband were pioneers of this region forty years ago; they went out into the unbroken forest and cleared eighty acres. Eight of this woman's twelve children were born here; she often did not have a neighbor attend her, but delivered herself, and lost little time from her hard work on the farm. A massive weather-beaten woman, she still, though old, works in the fields with the men, and can lift a huge kettle full of potatoes to the stove as though it were a feather.

Among the women interviewed by the agents who had called in neighborhood women to help them at their confinement, some said that even these did not always arrive in time. For instance, in one case a neighbor was sent for but before she came the baby was born. The father cut and tied the cord; the neighbor when she came expressed the placenta. This mother, it is not surprising to find, continued all her work, cooking for her husband and four children, cleaning, washing, ironing, milking five cows, churning, caring for a garden and thirty chickens, helping with the haying and other farm work up until the time of confinement. Afterwards she stayed in bed four days, and then resumed her housework.

In this township twenty-eight of the fifty mothers interviewed were attended by a physician. These lived for the most part, in the part of the country accessible to town. In this section the conditions as to prenatal and postnatal care were therefore, as might be expected, little different from those in Township A. Only nine mothers had had any prenatal care, five had had a urinalysis, though only one had had more than one examination. As for care during the puerperium

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eighteen out of the twenty-eight had no visit after labor, though a number of them had been delivered with instruments.

It is rather a startling fact that of these twenty-eight women, seven were delivered with forceps. One of these women recorded that she had milk fever seven days later lasting one day.

For part of Township B, the problem is then almost the same as that in Township A; in the more unsettled portion it is, however, a different one. Here hard working women, mostly of rugged and sturdy stock, bear their children with only the help that a friend and neighbor can give. Without this help the women would have no one to assist them.

Township C in a Southern State shows us conditions very different from those of A or B. This township is in flat farming country, away both from the seacoast and the mountains. It is entirely rural, with no village and no railroad within its limits. The nearest trading center is a small town which is four to twenty miles away from the different parts of the township. There are about two white people to one colored person in this district. Almost all are native-born Americans. It is mainly a cotton raising country, though some corn, tobacco, and garden produce are also grown. Usually the women work with the men in the fields.

There are three or four planters with their tenants—the latter usually working on shares; many small farmers working on their own account; and many farm laborers. The land is not richly productive, and fertilizer is almost a necessity in order to produce a crop. Many of the colored people live under conditions of extreme poverty, in small tumble-down cabins or shacks. The physicians most accessible to a large part of the township are in the town already spoken of; the nearest physician lives only two miles away, just across a swift river which must be crossed in a bateau. Many of the mothers spoke of the time which it took to get this physician, for the man running the bateau is frequently not to be found. At night, or after a rain, it is almost impossible for him to cross the river. There are few telephones and the service on these so uncertain that most people "hitch up" and go for the doctor, when they need him. The main roads to town are good, but some parts of the township are almost inaccessible on account of bad roads. No wonder then that frequently the physician arrives after the child is born. This happened in one case where a physician

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had been engaged because the mother had had difficulty at former labors; with the last child the doctor did not reach the mother until some time after the baby had been stillborn.

A white mother, 44 years of age, who had had eleven confinements, became suddenly ill the evening before her last child was born. She sent for the physician who, while he lived only two miles away, could be reached only by crossing the river. At the time he was sent for, he was away on another case, and could not reach the mother until the next morning. Delivery was delayed until he came, the mother suffering greatly all the while. It was a shoulder presentation and when the mother was finally delivered the child was stillborn. The mother was very ill afterwards and confined to her bed four weeks.

A very common note on the outlines is "Mother engaged a physician for all confinements, but he never arrived in time—seven miles away," or "Baby born an hour before physician arrived. Physician lives six miles away. Mother called in neighboring midwife."

One woman told of her experience at a miscarriage a year before. While she was doing hard field work she turned faint and had a severe hemorrhage. A heavy storm came up and the family could not telephone for a doctor so her husband hitched up the horse and took her to town in a buggy nine miles through the storm.

There is evidence from the interviews that the inaccessibility of physicians does not altogether explain why they are rarely called to care for women at confinement or for other care. Many women, especially among the colored, are quite unable to pay a doctor's fees. By two colored women the agent was told that a physician would not answer a call until some reliable persons were found to stand responsible for the fee.

Of the fifty mothers chosen for this study because they were the first interviewed, twenty-six were white and twenty-four colored. Only ten white mothers were attended at their last labor by a physician; fifteen white mothers and all twenty-four colored women were attended by colored midwives. In several physicians' cases midwives did the nursing.

The group of cases attended by physicians is so small that it is hardly worth while to give figures for their prenatal care. Eight had some care, in five cases urinalysis was made. In two cases the mothers were asked to send in specimens of urine, though they themselves had no examination. Of these ten cases, three had instrumental deliveries.

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No mother had trained nursing care, and only one had care from a practical nurse. In thirteen cases midwives did nursing service, in eight, staying in the house during the mother's confinement.

The midwives in this township are all colored; one of them is a colored man. So much has been written about the midwife of the South that I shall not speak much on this subject. These women, too, are neighborhood midwives, as were those in Township B; they are, however, more confessedly professional as they acknowledge a usual charge of about $2.50 to $3.00, sometimes charging $2.00 a week for nursing service.

One midwife, who is in constant demand by the mothers, is a clean, intelligent colored woman, eager for suggestions, apparently free from superstition. She uses antiseptics to disinfect her hands and boils the thread and scissors used in tying and cutting the cord. She has had a little teaching from physicians. In cases where patients are not making the proper progress she urges the family to call a physician. She remembered two such cases where forceps delivery was afterward necessary, also one case of breech presentation. Of none of the other midwives could such statements be made. Each, however, claimed that she washed her hands (several in sweet-scented soap!) and put on a clean apron before she examined the patient. They all make two or three internal examinations during labor. Many of them give quinine, and ergot; almost all give tansy tea to increase labor. One woman, as a practice, keeps a patient on her feet and gives double tansy tea to keep "de misery movin'. Some of 'em laks to be on de knees when the baby comes." The cord is usually dressed with a scorched rag, on which may be used hog's tail oil and castor oil, nutmeg or lard. In one case attended by a midwife there was a malposition. The midwife said the baby's "head was pitched," but though she was unable to deliver the child she was unwilling to call a physician. Finally, however a physician was called and the child delivered.

Township C has then very different problems due both to inaccessibility and to poverty.

I hope that these brief sketches have brought before your minds more vividly than generalizations would have done some of the problems which must be solved before women in rural communities have good care during pregnancy and confinement. Obviously, one can make few general statements about the conditions relating to obstetrics in

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rural districts. Yet two problems are to a certain degree common to all the districts spoken of and probably to most rural communities, although modified by questions of poverty, nationality or pioneer conditions; these are: first, general ignorance of the need of good care during pregnancy and labor; second, inaccessibility of such care.

It seems to me that around the solution of these problems any discussion of improvements in rural obstetrics must center.

I think we all agree that it is of prime importance in improving prenatal and obstetrical care in the country as well as in the city to convince everyone that skilled care during pregnancy and labor is necessary. I myself believe that when women and their husbands are convinced of the need of such care, and when women demand it, physicians will furnish it; medical colleges will provide better training for physicians; and communities, rural and urban, will see to it that women bearing children are properly protected.

Many speakers in former discussions of this section have expressed the same belief. How people are to be convinced has never been fully discussed. I believe that this, the essential problem, is a very peculiar and difficult one of public health education. People base their belief on their own observation, however small, rather than on mortality statistics. They observe that the large majority of women they know, who bear children, do not die, even though they go through the experience without any attendant or with one who is quite evidently unskilled. It is the two contrasting facts—that childbirth to a normal and sturdy multipara, such as are many rural mothers, is really a simple thing, unless complicated by the uncleanliness or interference of an attendant; but that a complicated case of labor is one of the gravest of surgical emergencies—that make the whole subject a hard one for public education. A person whose experience has never included a severely complicated case is hard to convince that all women really need skilled care. I hope the next few years will see a continuation of the great crusade which has been begun to convince everyone that good prenatal and obstetrical care are necessary, and I hope especially that this work will be extended to the country. I believe that the ways in which rural women can best be reached should be studied, and many methods tried for bringing this subject before them.

Inaccessibility of good care is the special problem in the country which is entirely different from those of the city. However convinced

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the people in a country district may be that women need good obstetrical care it will always be more difficult and need a greater push of public opinion to develop feasible plans for giving it to them. The question is really an economic one. The cost in money, time and trouble of providing good care in the country is far greater than it is in the city; while on the other hand, money, in cash, is not plentiful. When a physician must travel several hours to get to a patient, he cannot attend many cases; and he must necessarily charge sums large enough to pay him for the time spent. The factor of distance is increased by bad roads, impassable rivers, etc. Hence, the cost to the patient of medical care is high. Where a prenatal visit, or a visit following labor means an additional $9.00 or $10.00, no unusual sum for a physician's visit in the country, it is naturally considered unattainable even by well-to-do country people. A long journey to town over bad roads, on the other hand, may be unwise for the mother to make during pregnancy. Even the cost of one visit from a physician to attend labor is often considered prohibitive, especially as the frequent experience is that the doctor arrives too late to be present at birth.

The neighborhood midwife develops quite naturally as a result of these conditions. A woman may be called in once to a neighbor in an emergency when a doctor or trained midwife has been called but has not arrived. The case is normal, all goes well; the doctor when he comes may compliment the neighbor woman on what she has done, and possibly give her a few words of advice about care at childbirth. Later the patient gratefully gives her a present of a few dollars. After an interval another case exactly similar occurs. Gradually she acquires a reputation in the immediate neighborhood; her neighbors get in the habit of calling on her at such times, and she takes care of them from kindness, often quite aside from a desire for the present of $2.00 or $3.00 which she may receive for her help. Where it is extremely difficult and expensive to get a physician, as in the rough part of Township B, it is hard to see what the women would do without her help. A professional midwife would be quite unable to live from the fees which these women receive as gifts from their small number of patients; these acting midwives are, however, the wives of farmers and do not depend on their practice. They are usually untrained and unlicensed. Getting a license would involve taking a journey and much time and

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trouble. Many of them undoubtedly are unaware that they need to have a license.

The problem of providing a practical method whereby women in remote rural districts may have adequate prenatal and obstetrical care has not, I believe, been solved anywhere. In discussing suggestions for its solution I think we should start with the premise that it is a practical impossibility for economic reasons to provide care for every case, corresponding to the best care procurable in hospital and private practice in a city. The essential problem is to provide, first, means for the detection and hospital care of complicated cases of pregnancy and confinement; second, a feasible plan whereby normal cases may receive adequate care in their homes.

The fundamental provisions necessary to meet this problem naturally vary with the density of the population and with the differing living conditions found in various parts of the country. It is probably safe to say that the county would in general be the unit in any plan, and that county centers of maternal and infant welfare could be established, ordinarily at the county seat, but accessible to all the women of a county, where they could obtain free or for pay simple information as to the proper care of themselves and their babies. The plan for such a center would naturally include, first, a county nursing service; second, a cottage maternity hospital or beds in a general hospital, for the care of complicated cases or for normal cases where women can leave home for confinement; third, provision for skilled attendance for normal cases at their homes, with access to especially skilled assistance for complicated cases; and, lastly, provision for obtaining temporary household help for mothers whether confined at home or at the hospital.

A plan embracing the features thus roughly outlined must, I believe, be considered as an essential element in any complete organization for public health protection in rural communities.

The greatest progress made anywhere so far has been made along the line of rural nursing. In this country a considerable number of counties now employ nurses whose salaries and expenses are paid by the Board of Supervisors. Many State Legislatures have passed laws permitting the employment of nurses by such boards; Wisconsin last year passed such a law. Several of these county nursing organizations are affiliated with the Town and Country Nursing Service of the Ameri-

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can Red Cross. Many public health nursing organizations are doing rural work, although they do not cover a county. In most county nursing systems the first work undertaken is usually school nursing. This is the work, the value of which is most easily explained and proved. After this work is fully established, other branches of work are naturally developed. I hope we shall hear from nurses in this section or that on rural communities, concrete examples of how obstetrical nursing is growing in rural districts.

A very interesting point is the cooperation which has been developed by at least one county nursing association, that of Loudoun County, Virginia, with the county home demonstration agent employed under the Smith-Lever Act. The many women working in the South under this fund are an educational force for women of the greatest importance.

In Canada, the Victorian Order of Nurses, which in 1914 included 280 nurses working in affiliated societies has within the last few years developed a "Country District Nursing Scheme." The following is a description of the plan as given by its superintendent, Miss Mackenzie:[3]

"By this scheme, a local association, instead of being organized in a city or large town, is organized in a large country area of twenty miles square or more, for the purpose of supplying trained nurses for the people on the homesteads, ranches and farms. The nurses have their headquarters in the most central spot possible, and go out to patients, near at hand, or five, ten, fifteen or twenty miles distant; they combine continuous nursing with district nursing, and it is hoped that they will prove not only nurses, but also friendly visitors, teachers and advisers to the people in the lonely parts of the country.

"In connection with each country district, we are planning to have a Nursing Home, with accommodation for at least two nurses and two emergency patients, so that there may always be a clean, sweet spot where an accident case or maternity case may be taken and receive skilled care. One of the nurses will look after the Home and the patients in the immediate neighborhood, and the other will respond to calls to more distant parts. In these Homes, too, it is planned to have a good deal of teaching done, mothers' meetings, home-nursing talks and so on, arranged for. The Order's hope is to have in the near future a chain of these Homes stretching clear across the continent, so that there may be fewer and fewer people out of the reach of trained nurses. When that is done, we shall feel that the problem of the nursing of the people in the isolated parts of Canada is practically solved. And here we may add that it points a way for the solution of the problem of the nursing care of the people of moderate means."

Since this report was given, several such stations have, I believe, been established.

[3] Public Health Nurse Quarterly, 1913, V. 33.

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In the 1913 report of the Order[4] Miss Mackenzie writes of the very useful co-operation which has been given to the work by women's institutes, Home Economics Societies and the Home Makers' Clubs. She says:

> In those bodies of women we find organized the serious, thinking women of the rural parts of the country, who know the needs and the difficulties and who can judge any scheme at once as to whether or not it is practicable.

The work of the New Zealand Society for the Health of Women and Children in rural areas is so well known to you that I need not describe it.

Dr. Janet Lane Claypon gives an interesting account of the County Nursing Associations in England and the nurse-midwives working under them. This forms part of Sir Arthur Newsholme's recent report on "Maternal Mortality in Connection With Childbearing."[5]

A county center for maternal and infant welfare may be an easy development from a county nursing service. I hope that Miss Olmstead and other nurses will tell us of the work of this kind that has grown out of rural nursing. Such a center at a county seat, accessible to a large number of mothers in a county, might develop in many ways.

The County Maternity Hospital has been proposed in this country by Dr. Lobenstine[6] and Dr. Henry Williams,[7] but I do not know of any example here of this plan being carried out.

In Canada the "Cottage Hospital Fund" administered by the Victorian Order, has made possible the establishment of small—often 10-bed—hospitals in outlying districts under excellent supervision, supplied with nurses from this Order.

In East Prussia, in the rural districts about Konigsberg, a system of small hospitals has been established by the German Red Cross, co-operating with the Workingman's Insurance.[8] There are twenty-three parishes in this district, each of which has a Red Cross sister, who has her own home in a small house rented for the purpose, with a storeroom of supplies for immediate use in emergency; almost every station has its horse and carriage for the sister's visit.

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[4] Victorian Order of Nurses for Canada. Report of Board of Governors for 1913, p. 20.

[5] Great Britain Local Government Board: Supplement to Report of Medical Officer for 1914-15, p. 95. [6] Lobenstine, R. W.: Modern Hospital, 1916, vi, p. 127. [7] Williams, H. S.: Twilight Sleep, p. 95.

[8] Rural Nursing in Germany. American Red Cross Magazine, 1913, October, p. 52.

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"Persons only slightly ill make daily calls at these stations, and the sister visits those more seriously ill in their homes. She renders reports to the physician of the Insurance Bureau of all illnesses that she discovers by the visits to the stations or in her calls at the homes. The sister also teaches the families of the laborers general hygiene. She brings cleanliness and order in the household; she cares for the babies; she sews the children's clothes; she makes soup for the man when the mother of the family is ill; she instructs the wife how to procure an income during the illness of the father; she makes the bed of the old and reads to them the Psalms."

There are four small hospitals scattered throughout these twenty-three parishes. Little farms or small separate houses in a village have been bought and rebuilt so as to provide space in each for twelve beds, a lodging for the nurses, a storeroom of supplies, a prescription room and operating room, kitchen, bathroom, etc.

The last element in the plan outlined, provision for skilled attendance for normal and abnormal cases in rural districts, is, I realize, the all-important part of any plan, and the part most difficult to obtain. It will take long years of improvement in medical education and organization to bring it about. But is it not high time that the need for improvement is brought to the fore?

Finally, I can only repeat my belief that the chief way in which this society can further the cause of better obstetrics and better prenatal care in rural as in city districts is through the publicity which it can give the idea that such care is necessary and is the right of every woman who bears children.

DISCUSSION

Mrs. William Lowell Putnam, Boston: Will you ask the initiated to explain to the uninitiated why stillbirths are not reckoned in the problem of infant mortality?

The Chairman: There are many different meanings to the word stillbirth. I have found that stillbirths are recorded as such in some cases after the baby has lived certainly a few hours. I believe legally in Massachusetts, if a baby actually breathes once, it is not a stillbirth, and it can inherit property.

Mrs. Putnam: In counting the infant mortality is the stillbirth never counted?

The Chairman: The only answer I have to that—I would like the statisticians to answer it—is that most infant mortality figures are given in percentages of the live births. There again the stillbirth is simply excluded. I should like to hear from some of the health officers present.

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Dr. W. C. Woodward, Health Commissioner, Washington, D. C.: I presume stillbirths have not been recorded as part of our infant mortality because our infant mortality has been, and unfortunately in many places still is, computed on population and not on registered births; and as long as stillbirths are not counted in enumerating population they cannot be used as a factor in computing mortality. As our records improve, so that a community can accurately state its infant mortality on the basis of registered births, the logical thing will be to include stillbirths, if not in the infant mortality rate itself, then at least as part of any statement concerning infant mortality.

In my own office, I use the word natality to indicate the ratio of all births, both live births and stillbirths, to the population, so as to differentiate it from the ordinary *birth rate*, which as commonly stated relates only to live births although of course the two words mean essentially the same thing. We state the percentage of still births to all births, both live births and stillbirths together but our infant mortality rate is computed solely on the basis of live born children, since the stillborn children had no chance to die, and any death rate represents merely the frequency with which *possible* deaths occurred in a given group and in a given period.

You will find in the annual reports of the Health Department of the District of Columbia, I think, as careful an analysis of the situation in respect to stillbirths as you will find anywhere in this country. The record shows the period of gestation at which the birth occurred, the cause, as reported on the stillbirth certificate, and the race, whether white or colored. Recently we have taken up an even more intensive study of stillbirths, with reference to the practices of midwives and of physicians and to the occurrence of stillbirths in institutions and outside of institutions.

It is very difficult to draw conclusions of any value with respect to the figures thus far collated. One difficulty with respect to stillbirth statistics, and one that relates with particular force to the occurrence of stillbirths in rural communities, is the ease with which the body of the stillborn child is disposed of. Under our own law any birth must be reported if the child has apparently passed the fifth month of gestation. Prior to that time it need not be reported, though in many such cases reports are made. When the birth is reported the body must be disposed of as the body of an ordinary dead person. But in the ordinary rural community the stillborn child may be buried on the premises and nothing said about it.

Our records show a relatively high percentage of stillbirths in institutions. Doctors in charge of hospitals say that this is due to the fact that so many cases are admitted actually in labor. Sometimes a midwife has bungled the case, and it is brought to the institution in bad condition. We must, however, have the figures that show how many of these institutional stillbirths occur in these classes, before we can be quite satisfied. At present we are tabulating the births and stillbirths of every physician and every midwife separately. Our purpose is to take a group of representative physicians attending a reasonable number of cases of confinement in institutions and a reasonable number out of institutions,

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and then see whether stillbirths are more frequent among the institutional cases than among the home cases. In that way we hope to find some light on the subject.

Among the colored people the stillbirth rate is much higher than among the whites. The extent to which this is due to syphilis we do not know. The more profoundly one goes into the subject the further one can see the road that has to be travelled before reaching the end. I am glad this matter is to be taken up by the Association.

Dr. Emmons spoke of enlisting the support of public health officers in the effort to secure the health of the unborn child, and to secure better obstetric service. The day has gone by when the public health officer can look on the abating of nuisances and the control of preventable diseases as the chief part of his duty. We cannot yet see the end of contagious diseases, but we do see them diminishing and other diseases increasing. We see infant mortality diminishing after the first month of life, but we also see that before that time it has not budged, and there it presents as great a problem for the health officer as does smallpox, or scarlet fever, or infantile paralysis, or school hygiene, or anything else! I am heartily with Dr. Emmons in any effort he may put forth to enlist the support of the health officers of the country for the prevention of the mortality that is incident to child birth.

The Chairman: I hope some other health officers will give us something in this subject. I have put forth some pretty radical suggestions, though they may not seem so radical if approached in the right spirit. I was hoping we might have a little opposition to these suggestions, such as we have had in the past in regard to the midwife—she has been almost tabooed as a dangerous subject.

Dr. Florence Sherbon, Colfax, Iowa: I feel a diffidence in speaking on this, since I am not an obstetrician, but this summer's experience has given me a few convictions, and a new point of view which I would like to express. Perhaps the view of the rank outsider may have its place as well as the opinions of those inside.

I am not, as I said, an obstetrician. I have always shunned obstetrical practice. I graduated twelve years ago from the typical medical school of that time—I am glad to say that since then it has improved its methods in a great measure. I am loyal to my school, and I do not wish to give it a "black eye," for it does not deserve it. At the time when I was there it was simply typical of institutions at that period.

My obstetrical training, my preparation for the practice of obstetrics, had I elected to go out and become an obstetrical practitioner, consisted in reading my text books, listening to lectures dealing chiefly with abnormalities, delivery of a manikin put into presumably abnormal positions, and the witnessing from the amphitheatre of the delivery of a few cases.

With that preparation I passed an examination, and was given a certificate to go out and practice obstetrics. I had had a little experience as an institutional nurse, and such observation as I had had and such impressions as I re-

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ceived from my lectures and reading, created in me the feeling that maternity was pathological and that I must always be expecting to meet critical situations. I never took a case of obstetrics, because I was afraid. I took up another line of medical work entirely.

In my own state I never actually saw a real live midwife at large! From my impressions, and experience, and from my reading of the transactions of this society and other societies interested in the question, I received a profound conviction that the midwife was a reprehensible creature, that she should be exterminated.

I went out to do this rural investigation this summer with these two things in my mind; first, that maternity is pathological, that every mother who contributes to the population of her country takes her life in her hands and assumes the greatest risk possible in human experience; and, second, that the mother's greatest menace is the midwife.

I have come back from this investigation with the profound conviction that maternity need not necessarily be pathological; that it was intended to be a normal affair; that it is rapidly becoming pathologic for a variety and complication of reasons, social and otherwise, and that *this* fact should be the starting point of our investigations and observations.

I have come back with the conviction that so far as the rural mother at least is concerned, the country doctor is a far greater menace than the midwife, that she is safer in the hands of this German neighborhood midwife of whom Dr. Meigs told you, who has had twelve children of her own, or the little Polish midwife who does not read or write or speak English, but who delivered herself of her twelfth and thirteenth children—a perfectly healthy, live pair of twins, between six and seven in the morning, before having her breakfast as usual. By the way, that woman's record, so far as was determinable, was clean as far as infant or maternal mortality was concerned, and I believe the women were safer in her hands than with many of the rural physicians. The practice of rural obstetrics is a difficult matter. These men are sent out from our medical colleges and schools with little preparation beyond a smattering of knowledge of the mechanics of childbirth. These women, who are ignorant and unprepared, but who have had twelve or fifteen children, know something which not one of these country doctors, or any obstetrical specialist of the other sex can ever find out, and they know enough to let well enough alone, and they have patience to wait. The country doctor who is called to go out six or eight or even twelve miles from the telephone has a good deal asked of him if he is expected to sit down and patiently wait. He has a terrible temptation there to use the medium for haste which he has in his bag. There is nobody there to know, and nothing to prevent him from telling the mother, "You never in the world can have that baby unless I help you." We found more complications and bad results from that one situation than from any other thing I could mention.

This problem cannot be disposed of in a word. It seems to me the starting point is a matter of determining the maternal "norm"—there *is* a maternal "norm" if we can once find it, and it seems to me, if you will pardon the im-

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pertinence, that the obstetrical world had better be about this matter of determining what constitutes normal childbirth, and, taking that as a starting point, start a propaganda which will restore to the mother of the future the privilege of bearing her children in safety and in freedom from this terror and danger, and until that is done, give the poor midwife a rest!

Another thing which has been borne in on me as I listened to these discussions and has impressed me in the past transactions as I have read them. Every speaker, and every paper, practically, in attempting a solution of the matter says the same thing—and I remember a certain paper which I wrote myself some two years ago in which I proclaimed the same vociferously, viz., that it is the duty of the state to establish maternity hospitals, so that every mother citizen of the state may have the privilege of going to the hospital for delivery and care. Well, that does not look so sound to me now. I believe we are in danger of placidly accepting the increasing pathologicity of maternity and of institutionalizing maternity, and that about the time we get this elaborate system of maternity hospitals established and going, by state and municipal appropriations, just about that time we shall awake to the fact that after all an institution is not the best place to have a baby. We shall come to the same point that we have already come to in the matter of foundling hospitals. First, there was the problem and the pressing need of caring for the foundling child, the orphans and homeless children, and of taking care of them properly, and we built institutions and institutions and institutions, and still more institutions, and better equipped institutions—and now we are abandoning these institutions as fast as we can, and are deciding that that is the wrong plan.

I believe all the normal transactions of the home had best go on inside the family and the home, and that it is our business to start our investigations far enough back at the beginning of things to make it possible for us to let these people have their children born normally and without fear and properly cared for in the home. When you talk about visiting nurses, particularly rural visiting nurses, I am with you, but I am a little afraid of the institution business. I believe the money that would go into the establishment and maintenance of these maternity hospitals, if spent in propaganda and home visiting, and in bringing the care which will start early enough—not with the conception of the child, but as Holmes said, a hundred years before, would make the institutions unnecessary.

The Chairman: I am sure we are very grateful for these personal impressions gained through field service.

Dr. Lydia DeVillbiss, Director Division of Child Hygiene, Kansas State Board of Health, Topeka: When we recommend such high standards in obstetrics that the mothers are not able to come up to them, I find that they will not tell us what they actually experience. I have wondered if we might not get good or better results with simpler methods.

The rural population of Kansas comprises about 85 per cent of the total population. From the Division of Vital Statistics I learned that among this 85 per cent there was a non-medical attendance at childbirth problem of 4½

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per cent. The cases were spotted on this map, one dot representing 100 cases. A few of the western counties are covered with dots, one county having a non-medical attendance problem of over 50 per cent.

Examining this a little more closely, we find that there are only 650 people in the entire county; that 26 babies were born last year, 15 of them without medical attendance; and that there isn't a doctor living within thirty miles of the county line. How to reach these women who have no doctor and for whom a doctor is not available under the present system is one of our problems.

Especially to reach the isolated mothers, we inaugurated a Mother's Confidential Registry. The expectant mothers and the mothers of children under five years of age register with us. We send them a series of nine prenatal letters and after the baby comes five birthday letters. Of course many times we recommend to these mothers that they see a physician, but that will not solve their problem so long as a doctor is hopelessly out of their reach.

In Kansas whenever one speaks of something new or progressive, someone is almost sure to say, "Oh, yes, we started that in Kansas." As a matter of fact, Kansas has inaugurated many excellent innovations and because of it they have a good deal of pardonable pride. I wondered if we could not use to advantage some of this pride of progressiveness in awakening interest in the matter of rural health and especially infant mortality and in matters affecting the health of children. So I asked the Governor to put up a trophy, and he now is offering a handsome loving cup to be awarded after one year to the healthiest county in Kansas. Seven counties are entered actively and county health officers, school authorities, medical societies and citizens are working together in an effort to capture that trophy.

I intend to take back some of the excellent ideas advanced here and to see if we cannot work out something for the better care of rural women and children in these counties which are actively interested in capturing the prize for the healthiest county.

Dr. H. M. Bracken, Secretary, Minnesota State Board of Health, St. Paul: A word about obstetrical work in the country, and the midwife. The midwife is a necessary evil in some places. I hope she will not become permanent in rural work. I would much rather depend upon a farmer's wife, in the case where it is necessary to rely on such non-medical assistance. This is not meant as a criticism on all midwives, but rather to express the feeling that we do not want to encourage the development of midwifery practice. The encouragement of midwifery practice is not an encouragement of better obstetrical practice as spoken of by Dr. Meigs.

There are just two possibilities for helping out in rural districts; one is the small hospital. Many of you who know something of the Middle West and West, know that the progressive doctors feel that they must have a little hospital of their own if they cannot get somebody else to build one for them, for they know they cannot do good surgical work in the home.

This is what is needed in obstetrical practice. The point has been raised that the doctor is in a hurry and is negligent. This is often true. It has been

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said that the doctor often makes but one visit, and fails to inform himself as he should as to the condition of his patient. This too is true. When I go about the country, and doctors show me their hospitals, the first thing I ask is "Do you take obstetrical cases here?" and more and more I get the answer "Yes." The doctor does this, you may say, largely from a selfish point of view; he would rather have the patients come to him. But does the patient benefit by this selfishness? Certainly, and the obstetrical cases there have just as good care as do the surgical cases.

You can be very sure that if a woman has once gone to one of these hospitals for obstetrical care she will never want to be confined under ordinary conditions in rural districts if she has later occasion for such treatment.

The more we have of country nurses the better, but we must not depend on the country nurse entirely in obstetrical work. If the man of the house needs surgical treatment you may be sure he is going to have the best he can get, and he doesn't care what it costs. And if a woman is to be confined she has as much right to the best treatment possible as the man has for good surgical treatment. If she is too poor to pay the bills then the county or the state ought to pay them.

People have not yet begun to appreciate the value of the human being. The farmer looks after his cattle and is not going to take any chances with them. He can see the dollar there, but apparently he cannot see the value of a baby. It is time he was made to see it.

The Chairman: Will Dr. Mendenhall speak to us?

Dr. Dorothy Reed Mendenhall, Madison, Wis.: At the invitation of the Wisconsin State Medical Society this year, I investigated the Wisconsin mortality statistics for 1915. Several astonishing points which may interest you were brought out by this work.

In the first place, we are surprised to find the number of babies delivered by midwives in Wisconsin relatively low. Judging from the birth certificates, less than one-sixth of the children in the State are brought into the world by persons other than licensed physicians. We found also that in our cities at least, puerperal deaths are in inverse relation to the prevalence of midwives. In Wisconsin we can not lay our high maternal mortality to the midwife, since our statistics prove that she is a much smaller factor in our puerperal deaths than the physician.

Another point which bears on this discussion was brought out by our figures—64 per cent of the puerperal deaths in 1915 were due either to puerperal sepsis or to albuminuria and convulsions, which are both largely preventable. In only two instances that I can remember, did the physician signing the death certificate state that he was called in after other non-medical handling of the case. It seems to me that the physicians throughout the state must answer to the charge of culpability in many of our puerperal deaths.

Puerperal sepsis is a notifiable disease in a few of our states, as it has been for many years in England. I feel that this Association might take up

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the question of whether it would improve the condition and decrease the cases of puerperal sepsis, if it were made a notifiable disease in all the states.

One purpose of our investigation this year was to find how many cases of puerperal deaths were recorded under other diagnoses. We investigated a large number of cases which aroused our suspicions, and so added 38 cases to the puerperal deaths in 1915. You would be surprised to find the different ways employed in evading the question of puerperal sepsis. In many instances it is called pneumonia or septic pneumonia. In others we found maternal deaths masquerading as malaria, heart disease, "auto-septicemia," "cryptogenic infection," or even tuberculosis.

One difficulty that we encountered in our work, was that most cities, in preparing their reports, put as many as possible of their deaths under one year, under stillbirths in order to reduce their infant mortality record. The classification made at the State Board of Health will then differ markedly from the city reports. There should be an unmistakable place on the birth certificate for recording stillbirths, a place where it can not be overlooked. As it is now, the statement of stillbirth is put in Wisconsin with the diagnosis of death or the eye treatment, and you have to read every word of the certificate to be sure whether the child has breathed or not, and then it is often not clearly stated. All statisticians and health officers should agree to accept the rules adopted by the American Public Health Association, which consider as still-born only those cases where the statement is made that the child did not breathe, and order investigated all cases where the reports of the physician and the undertaker on the certificate disagree. In many instances the physician undoubtedly puts down stillbirth in cases where a child dies immediately after birth, in order to save himself trouble. Without some standard of classification on this point, infant mortality records are worthless.

The Chairman: There is certainly food for thought in this question, for medical men.

Dr. Bracken: For the vital statisticians, I should say!

The Chairman: Earlier in the day we spoke of one state in which if a child breathes it is not called a stillbirth—such a child can inherit. I am not quite sure whether Dr. Mendenhall would favor federal laws to cover this point, or would leave it to each state. It is a large question.

I have learned that Dr. Mendenhall made her investigations under the Wisconsin Medical Society. In Massachusetts—I am far enough away to say it boldly—we have not succeeded in getting the Medical Society to take an active interest in these problems. It has always seemed to me, as a physician—and I know the health officers feel it too—that the physicians, especially in our section of the country, have not yet gotten the public health attitude toward prevention of infant mortality, and are not pushing along measures which their backing would put through very quickly.

Dr. J. M. Beffel, Milwaukee: I had the pleasure of reading Dr. Mendenhall's paper and discussing it before the State Medical Society. There are

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some things which I hoped she would bring out here. It was one of the most instructive papers ever presented before that society: she gave the general average maternal death rate in Wisconsin as 5 per 1,000 living births. If in a given county the number of maternal deaths ran as high as eighteen per 1000 living births, and the normal of the state was five per 1000 living births, then the incidence of the maternal death rate was a little over three times as high in that county as it should be. It is a practical problem for health administration to find out why one town should have a death rate three times or five times as high as others. In the county in which we are meeting today there is a maternal death rate of 3.6 per 1000 living births. A county to the north has a death rate of 18—there is something wrong; another has a death rate of 12, 13 in another—something wrong! Three of the best counties in Wisconsin had death rates above 10 for 1000 living births. If the average is five per 1000 living births, it is up to us to find out what is the matter. The suggestion from Kansas is a good one. I judge they have county health officers; we ought to have them; we have a county coroner in every county, and a county surveyor and a registrar of deeds; it is important to register our personal property, and it is important we should have officers to administer finances, but we do not seem to consider it necessary to have health officers! We ought to have a county health officer in every county, then the state officer could get in touch with him and hold him responsible. We should get something in the way of results then in infant mortality, getting after it as business men, checking up the losses and reducing them in a business-like manner.

I would suggest that if we have not a county health officer the County Medical Society be the agency through which such work can be administered.

It strikes me we have said a great deal about doctors and midwives. If Dr. Mendenhall can show us that the death rate among mothers attended by midwives is on a par with that of mothers attended by physicians, it is not a question of education. There is a bigger question even than the problem of the education of the medical man. If we want to solve the problem of infant and maternal deaths it will be done through the education of the public as to what their rights are in any given case—education of the future prospective father and mother as to what they ought to expect of a medical man. Education of the mother in what she ought to know, is even more important than the education of the physician, for when people begin to know they ought to expect certain things of the physician they will get these things, and then we shall have a reduction of maternal and infant mortality.

Mrs. E. T. Bickel, Oshkosh: There is one thing that occurs to me about this. We talk about educating the prospective mother. Just at that time she is not always in condition to be educated. Why not start with the girls and boys at sixteen years of age, and teach them what should be done, prepare them as they should be prepared, so that physicians and nurses will not have to deal with the most appalling ignorance as they do now?

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Miss Katherine M. Olmsted, Supervising Nurse, Wisconsin Anti-Tuberculosis Association, Milwaukee: Dr. Meigs asked how we can convince the people in the country that they need better obstetrics, and that they should call the doctor instead of the neighbor.

It has not been my experience that we needed to convince them. They are anxious to learn. We need to give them someone from whom they can get this knowledge. I thought when I first started to do rural nursing it was a difficult proposition to teach them this. I found it was a difficult thing to teach the farmer he should sleep with his window open, but the easiest thing in the world to teach the mothers what they should know before delivery. They are eager to find out. Few nurses realize this until they actually start in the work. As a rule the rural nurse begins by doing tuberculosis work, and that is always hard and discouraging. The best way to reach the people in the country district is through Little Mothers' Classes. The children will all come to the classes, and almost as soon as they are well started the mothers will also be begging to come. They are anxious to learn. I felt very strongly that we did not want to urge county hospitals, but we did want one thing, and that was a physician in the county that we could depend on to go to these mothers. We as nurses can teach them all that we know about the need of prenatal care and better conditions. We can look for the first symptoms and teach them to look for the first symptoms and that they should be examined before the time of labor. We can go into the homes and urge them to have the doctor, but many nurses say they are unable to make the doctors go out in the county to the cases before time for delivery unless the family happens to be able to pay $25 or $30.

Another of our problems is the care of the pregnant mothers. We found they wanted to have good care, but could not get any care. The hired help problem in the Middle West especially in the rural districts is very hard to overcome. The mother cannot get sufficient rest, unable to stop the hard work, she cannot take the proper care of herself as she has all the responsibility of a family on her shoulders. She must get the children off to school; she has many duties. There is not a soul to come in and help her. It is no wonder they want the midwife. The doctor who comes out from the city would charge from $25 to $50 for one visit; they can get the midwife to come and spend a whole week, see to the children and get the dinner for the husband and take care of them all for a week for $10. The mothers are not ignorant of the fact that they would be better off under the doctor's care, but they are helpless, especially when poverty and need predominate, as is so often the case among the pioneers of the Middle West.

Another phase of the situation that interested me was the scarcity of the typical midwife as we see her in our cities. There are a few, but comparatively few in our rural districts. The midwife of the country is the farmer's wife on the next farm, the one who is the nearest. At the mothers' classes in the rural schools the first row was invariably filled with those women who had been in the habit of being called to help, eager to learn everything they could about the better care of the baby. They attended every meeting held where health was the subject of discussion.

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It seems to me that the big problem is not only teaching the mother, and the neighbor's wife, but showing the people how to take care of the mother until we can give the much-needed skilled assistance in a practical way. I believe the best progress will be made through the schools and the rural nurse. If the nurse can go into the schools, her presence in the community becomes known all over the county and very quickly she is requested by numerous notes and messages to come and visit various mothers; she is asked to have classes through which she has unlimited opportunities to spread the knowledge of prevention. But she must have the supervision and co-operation of the doctors. I do not feel that a full time health officer can do a great deal for rural obstetrics unless he is willing to go out and take care of the patients. I have always wanted a full time county health officer and then under that department some physician trained especially for obstetrical cases whom the county nurse could call on for assistance for poor and needy women. If we had an arrangement like that with county nurses to visit between the visits of the physician I believe we could get better results. We need a health center with a hospital and an out-patient department for follow-up work for every county.

The Chairman: I should like to call on Dr. Sawyer, of California.

Dr. Wilbur A. Sawyer, Secretary, California State Board of Health, Sacramento: I expected to escape, knowing that in California this field is a new one. We have nothing to display, and we have had little experience, but we do realize that we have reached a time when some of these matters must be state matters. The State Board of Health will have to take a stand on the the question, for instance, of licensing of midwives, before our legislature meets in January, and one of my objects in coming here was to find out what you, who have had experience, think on that subject.

Listening to this discussion on the need of better rural obstetrics I am impressed with the fact that, no matter what we do in education of our physicians, and in education of our midwives, we shall not have reasonable medical care in the distant rural districts until we organize the treatment of the sick so that the people in the cities will help pay for the care of the people in the country. We do that in our post office system. The man in the remote mountainous sections of California can get his letters and groceries through the mails as cheaply as the man in the city, although transportation is much more expensive per package in the sparsely settled regions. When we get some system by which a person in a remote part of the country can get proper obstetrical or other medical service for a standard fee, or under a uniform system of insurance, we shall accomplish what we are aiming at; and without organization into large units I do not see how we can. We hear of public health agencies taking a hand in rural public health nursing and in urging better and safer rural obstetrics, and I think the reason that we public health officials have been so slow in this matter is that the problem is essentially in the field of medical practice, and we have hitherto drawn the line sharply between preventive and curative medicine. I think that must be somewhat changed. We

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hope there will soon be organization that will make proper care accessible to everyone, and that such organization will be closely affiliated with the state and local health departments, so that health officials can be immediately helpful to the people who will be practicing what we now call curative medicine, including obstetrics. It looks as though the desired organization would come through health insurance and would come soon. I hope so.

The Chairman: Professor Sedgwick, of the Massachusetts Institute of Technology, in a conversation with me a few weeks ago emphasized just that point. He felt that public health authorities should come to recognize that there were three sides to public health work, namely, sanitation, contagious diseases, and preventive medicine, and perhaps men might more and more specialize in one of these branches. The health officer will have to be trained for the demand. It seems as if we already need men principally caring for the preventive side of medicine.

Dr. Fred. H. Allen, Holyoke: One word in regard to something of which Dr. Emmons may not be aware.

I was informed by a member of the committee of our Massachusetts State Medical Society that a bill was going before the legislature next year along the lines of the Workmen's Compensation Act, providing an insurance through the employers to the employes, and to cover maternity benefits. Dr. Cotton was strongly of the opinion that the bill would go through. The doctors of Massachusetts are afraid it will; afraid because if their present low rates for maternity cases are cut even lower they question whether good service, service even as good as now, can be given. That is a point that has to be considered While we cannot do too much to improve conditions for the mother, we must realize that it cannot be done by cutting down the present low rates that are paid the doctors.

The Chairman: I attended one of the hearings before the special committee on health insurance, and was interested to hear Dr. Cotton speak on these lines. I represent a different idea from that of the Medical Society, and am perfectly willing to admit there may be another side. My interest in the problem has come through my connection with a small health centre in a part of East Boston, a small island of 60,000 people, Italian and Jewish immigrants, and through trying to meet the obstetrical needs, particularly, of these people. Such congested parts of a large city have a special problem. We have been trying to furnish, through the Women's Municipal League, a system of maternity care in conection with what we call the Prenatal Clinic. We furnish trained obstetrical care and nursing care at a fee of $10 per case, but we find that even that amount does not get paid, and the result is that the more cases we have the more in debt we get. We have come to the conclusion that we either have to get money from the well-to-do people who are already supporting many other large charities, or we have to look for funds elsewhere. Personally I have felt that the greatest hope on the horizon has been health insurance, that is the paying of small amounts throughout the year and getting distant large

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benefits. The lesson in thrift would be advantageous, and perhaps as much as $25.00 might be provided during the time of prenatal and obstetric care. The obstetricians might get not only $10.00 per case, as at present, but perhaps furnish more satisfactory care and service at $25.00; this might result in the people paying the money themselves, instead of receiving charity. There is a distinct feeling of democracy when they pay their own bills, and have the consciousness that nobody is furnishing them charity. I believe that is a valuable thing, and I cannot quite agree that there is any danger to the medical profession. It seems to me more money is going to be provided for taking care of such things. It is undoubtedly a very difficult matter to organize and administer such an insurance system. It has been done successfully in other countries, and this committee in Massachusetts is making a thorough investigation, and trying to adapt plans to our conditions in this country. My feeling is that health insurance in time is inevitable.

Mrs. G. A. Hipke, Milwaukee: I have been very much interested in the prevention of infant mortality, and would like to bring up a few questions. Is not the question of better obstetrics synonymous with better economic conditions? It seems to me that that thought would help towards the solution of the problem. We find as Miss Olmsted said, that the midwife will take all care of the family for a week for $10 while the obstetrician would charge $25 or more for medical care only.

Is not the solution of the whole matter a question of economic conditions, and will this not be solved more through health insurance and maternal pensions than in any other way?

It seems to me that after all these are the two biggest things we can take up at a meeting of this kind, with the view of promoting legislation along these lines in the different states of the Union, or making it a Federal law.

We find another thing. It is a matter of economic conditions *and education*. Our medical schools are not giving enough attention to obstetrics, as has been brought out here, nor are the training schools for nurses in our oldest hospitals doing so. Many of the nurses of our oldest hospitals have seen perhaps only one or two or three obstetrical cases. This certainly does not fit them for the work.

Mr. Sherman C. Kingsley, Chicago: I am not a physician, but I am interested in this subject, and there is one phase of it to which I want to call your attention. I was born in Iowa, and I know now of the sort of things that prevailed there at that time. The families who have lived and prospered there have sold their farms, and moved into the cities, and the farms are largely operated by tenant farmers. In all these states of the Middle West forty to seventy per cent of the farms are operated by tenant farmers, and these people have to work perhaps even harder than the original owner. The farmer who has moved away is anxious that the taxes should not be very high; he is not very keen about improving the schools, and the man running the farm finds it difficult to make it pay enough for what he ought to get out of it and what

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the absentee owner ought to get out of it. These things furnish food for thought as to what can be done on the side of education—how to get this thing over to the people.

If we succeed in this work or in the tuberculosis work it must be because the person who calls for the services of the doctor knows more than the people do today about what service should be required. They know the value of some things but not of this kind of thing. Reference has been made today to the fact that it is easier nowadays to get about the country, and certainly the automobile and good roads are going to help. The other day in Kentucky, however, we heard of twenty nurses added to the roll in a district where very soon the only way they could get to their fields would be on horseback, and similar conditions exist in other places. Unless we get information to the people as to what they ought to know and what they ought to expect, and the care they ought to get, they are going to go on in the same way as at present. The midwives are going by tradition or even superstition. Tradition starts with the education of a given moment, and the education we are trying to give today will be the tradition of tomorrow, and the greatest hope we have is in getting the case so well stated that you can give it in words of one syllable to the people who need it.

Dr. Bracken: The question of health insurance having been injected into the discussion, may I say that I hope the doctors of this country will not make the mistake of objecting to health insurance. Doctors in England did that, and they are now learning that even with the law now in force they are better off than ever before.

Dr. C. A. Harper, Secretary, Wisconsin State Board of Health, Madison: This is a big problem, and I do not think any one remedy is going to solve it. The local hospital theory, I believe, is a good one; a local hospital will educate the public in that vicinity that obstetrical work is important. It also provides a safer place for a woman to be confined than in her own home. The education of a physician along these particular lines has its advantages, and, while at the present time the physician is to blame in a certain number of cases, he is not to blame in many of the cases which he is called on to attend. It is frequently the first time he has seen the patient or has knowledge that a confinement is expected in that home. He is often called only at the time of confinement, and has to do the best with the conditions that confront him, and frequently the condition he meets is a very serious one. If it were possible to get every prospective mother to understand that she should consult someone who is wiser than she along these lines and obey certain fundamental rules, there would be a great lessening in the death rate of mothers as well as in the death rate of infants. This is largely an educational problem. In Wisconsin we are endeavoring to stimulate interest and careful consideration on the part of expectant mothers by sending to the mothers of new-born babies a card, stating that the birth of their baby is recorded in the Bureau of Vital Statistics (explaining why it is important that it should be recorded) and further stating that if they will drop us a postal card they will receive a bul-

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letin, "How to Save the Baby." From the 60,000 mothers of babies born in Wisconsin we have calls for some 10,000 or 12,000 bulletins of this type per year. This is encouraging, as it shows the interest of the mothers concerning the welfare of the babies, and the desire to get further knowledge. We have found, also, that it materially aids in the registration of births.

I do not want to let the impression go, however, that when a mother dies or an infant dies it is due to the fault of some one individual absolutely. Frequently there are many factors involved that are more or less blamable for the disastrous results. Furthermore, I believe, that if you had all the expert obstetricians in the United States on certain cases those cases would fail. I believe on the other hand, that there is much to be learned, much common sense to be applied, and the midwives and physicians must get down to consider that a confinement is a serious proposition, involving the life of mother and child, and if he is hurried the physician should withdraw from the case or get some one to watch it. Many of the bad results in Wisconsin, as I have seen them, have been due to the hasty physician, who uses instruments too soon, who fails to give nature the proper time, and who cannot give proper attention after the confinement. We must teach the public that confinement, where a mother and child are at stake is worth more than $10 or $15, especially if $100 or $150 is paid for an operation for appendicitis. Until we can put up the price of obstetrical work where it belongs and bring down the price of surgical work, we shall not accomplish very much. The only safe plan, in my judgment, is to take the expectant mother early so as to follow the case right through from the beginning to the end, and make it a serious proposition at all times instead of a matter of course. By so doing we will get material results.

As to county health officers: We have at the present in Wisconsin a county physician for each county, paid for by the county, whose duty it is to respond to the calls of the indigent people who may be seeking aid or information. And I am safe in stating, I am sure, that there has not been a call on a county physician for advice in the field of obstetrical work. The county health officer in this state, in my judgment, would be of no more benefit than county health officers have been in other states, where the plan has been tried, or than is the county physician at the present time in the state of Wisconsin. I think that fundamental education as to the seriousness of the proposition on the part of the expectant mother and her friends, and prenatal care of the mother are the important factors that will bring success to our efforts.

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OBSTETRICS

ROUND TABLE CONFERENCE

Thursday Afternoon, October 19, 1916

DR. EMMONS, Chairman

The Chairman: Dr. Mary Sherwood, of Baltimore, for so many years chairman of this section, did great things in building up the interest and in organizing the work of the section. Her work has already brought many results, and should lead to ultimate success. I wish we might send her directly or through these records some recognition of how much her work in this section meant. Our efforts must now be directed to continuing this success.

I will ask Dr. Schwarz, head of the obstetrical department of Washington University, to outline the plan his department is working out—it reads ideally on paper—for the care of patients, and for training nurses to care for obstetric cases under certain limitations.

Dr. Henry Schwarz, St. Louis: I am glad to take the floor first, because I hope some of you will answer some of the questions that are bothering me today. The work of the department of obstetrics in Washington University, Dr. Emmons says, looks ideal on paper. The plan is ideal: that is to say there are ideal dispensary facilities where expectant mothers report early, they are instructed by paid social workers; visited at their homes and their home conditions improved, they are cared for at their homes by competent obstetricians and competent nurses, and when conditions cannot be made suitable, they are taken to the hospital and cared for under favorable circumstances. When they are discharged they are expected to come back for final examination, and if they do not come, the case is followed up, if possible. The baby is registered at the clinics for well babies. So it is all ideal, especially since we are in our new buildings.

I try to limit it, for there is need for caution for several reasons. To do efficient work we need paid associates. The care of a thousand patients is as much as we can manage at present. We do not wish to take a greater number because we hope that ultimately the community will assume the responsibility for this kind of work, and the city will take over all the work that is not needed for the school itself.

I like to feel that what we are doing is missionary work in rooting out poor obstetrics. By taking away these cases from the midwives and from the practitioners, who would perhaps make only a hurried call at the time of emergency, we lay ourselves open to the charge of taking bread away from some members of the profession. Dr. Mendenhall says I ought not to consider that for a moment compared with the good of the patient. I think that one of the most gratifying fruits of our work is that we are getting an increasing

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number of people who can, and do pay their way through the hospital and thereby get this very satisfactory obstetrical attendance. Incidentally they get a much needed rest.

We give very thorough training not only to undergraduates but to graduate nurses. We give the course to graduate nurses to meet the needs of those who work in rural districts. We limit the number to six students, and hope by taking them into the department for six months and giving them thorough obstetrical training to supplement their nurse's training, that they will be better fitted to do missionary work in some of these rural sections, not only to instruct expectant mothers but to take care of obstetrical emergencies if they arise, and to influence the public toward establishing county hospitals. The object of our course is to train the graduate nurses so that they will be able to give anesthetics, to apply the forceps, to be fairly competent obstetricians, not for the purpose of doing obstetrical work, but of being able to help in emergencies, and to detect the cases that ought to be sent to some medical center on account of some abnormality. I do not know whether our plan is going to work out or not, but we are going to try it, and I would like to hear from those who are present how such a move is regarded. I would also be glad to have suggestions as to ways by which our work could be made more beneficial.

The Chairman: I want to bring up another subject, but one that is allied with what Dr. Schwarz has just spoken of. As many of you know, "Prenatal Care" was given a new significance in the language of medicine in this country through the work of one person who demonstrated the possibilities of such care in a selected group of patients. You know, of course, that I am speaking of Mrs. William Lowell Putnam, and of the well known work of the Committee on Prenatal and Obstetrical Care, of the Woman's Municipal League of Boston, of which she is chairman. I will ask Mrs. Putnam to speak to us.

Mrs. Wm. Lowell Putnam, Boston: An investigation was made recently by Mr. Michael Davis, of the Boston Dispensary, which was extremely interesting and valuable and which was undertaken purely with the desire to find out what were the comparative results in the infant death rate in five congested wards in Boston of cases receiving prenatal care and of similar cases which had no such care given them; the Boston Lying-in-Hospital operated in three wards in South Boston and a Committee, of which Dr. Emmons is medical director and I am chairman, took care of two of the wards in East Boston. These two organizations covered about 10 per cent of all maternity cases in those wards and Mr. Davis conceived the idea of finding out what the results were for the 10 per cent as compared with the other 90 per cent. We must assume that the women were a little more intelligent from the very fact that they came for prenatal care, but this may have been merely accident, and otherwise, so far as one could see, the conditions were about the same.

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Investigations were made in 1914 of the deaths in the first week, first month and first year, and of the first two of these periods in 1915, but as the children that were born in the latter part of 1915 have not yet lived through their first year I can only give the comparative results of the first week and the first month for the two years. The relative proportion of deaths is very nearly the same in both. The differences between the two years were noticeable but not very great, and the results were most gratifying. During the first week and the first month of the first year studied (1914) about twice as many babies died among those who had no prenatal care as among those where it was given, and in the second year studied (1915) three times as many. During the first month, although it is the most critical period, the children are almost never brought to the milk stations because the mothers have not yet "got round to it," yet during that time the saving of life proved to be very great. This saving would seem, therefore, to be principally the result of the prenatal care.

With regard to our own work—we are carrying that out along the same lines we previously used for developing prenatal care, and the prenatal clinics, which are followed by obstetrical care in the homes, we are building up as fast as we can. Through the cooperation of the Instructive District Nursing Association, the prenatal nursing visits are now made for us by their nurses, and we are trying to demonstrate that in any American city similar work can be carried on, and that women can be given the best kind of obstetrical care for the price they now pay to midwives and very poorly trained doctors who are even more dangerous if possible than the midwife herself. I think we might say that the ill-trained doctor is the fool who rushes in where the midwife fears to tread. Of course, the Boston Lying-in Hospital has long taken care of a great many out-patients but that hospital has the benefit of the Harvard students, who must deliver a certain number of patients as a part of their training and this care is given the patients free, while most cities are in the position of our clinics, with no students to draw upon. We find that we can take care of a case for ten or fifteen dollars, five dollars goes to the Nursing Association and five or ten dollars to the doctor, according to the class of patient. Young obstetricians are ready to take these cases for that price. As soon as we can establish these clinics so thoroughly that they no longer need a medical director to do propaganda work for them, the cost of the best service will be exactly what is now paid for inefficiency and poor training.

We have proved that with our small number of patients, and we are now trying so to enlarge our borders that we shall have large enough figures to impress the public, because, though you could prove it to the satisfaction of experts with a small number, the public is always impressed with size.

The Chairman: Dr. Darling has had unusual opportunities for studying the problems of rural obstetrics. I hope he will speak to us.

Dr. Walter G. Darling, Milwaukee: I practiced in the country, and practiced obstetrics because of the unique circumstances in which I was placed as a young man. When I left the medical school I became associated with my

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father and uncle who were taking care of a large mining community; obstetrical work being irksome to older men, and I being interested in it, it was turned over to me. It gave me an opportunity to see the practical problems of an obstetrical practice in a rural district.

I think that adequate obstetrical care in the rural districts is a question of community interest and community responsibility, the problem of the sociologist. There should be a county institution, but whether it should be a general hospital or a special obstetrical hospital must be worked out. A county general hospital could be made the center of an obstetrical service almost as well as an obstetrical hospital. There is great need for trained nurses of course. We know the efforts of the country practitioner, however well trained, are entirely for naught when his work is upset immediately after he leaves the house. To offset this a competent nurse must be there to follow up his good work. There should be a hospital near at hand, situated at the junction of good roads, where an operative case could be properly handled instead of as it is now in the home. Such community hospitals, similar to the tuberculosis hospitals that are now everywhere accepted, could serve as training centers for rural obstetrical nursing. This plan would have to be backed up, I think, with some type of state insurance, so that the women of rural communities could get proper medical attention, and could afford the services of the nurses. The question of rural obstetrics is intimately associated with health insurance, and with this comes the question of propaganda, which is the function of our Society directly. It seems a colossal problem but it is not impossible of solution, and it is something we have to face and to fight for and work for.

The Chairman: Dr. Schwarz asked what we thought of his system of giving nurses a special course. Dr. Darling has given the answer from one man's experience very clearly.

Dr. Anna Ross Lapham, Lying-In Hospital, Chicago: The work done at the Chicago Lying-in Hospital was the outgrowth of the Chicago Lying-in Dispensary. From the Dispensary poor women are taken care of, absolutely free, in their homes. We have six internes and twelve students at the Dispensary; one interne, who is a graduate, and one student, and that student may likewise be a graduate of medicine, attend each case. We provide absolutely everything for the delivery except clean newspapers and hot water. We do not ask the family to furnish anything beyond that.

In recent years we have had enough nurses so that a nurse can usually accompany the doctor and student on these cases. The nurses are all graduates of the training schools connected with the various hospitals, and we have them from as far West as California and as far East as Maine. They get a post graduate training of four to six months according to the rating of their schools. For those meeting the requirements of Illinois four months is sufficient, but for some we require six. They are given training in the hospital and the dispensary, they are taught how to make supplies, to take blood pressure, to do urine analysis and make a rectal examination. And at this

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point I want to say they no longer make vaginal examination except on very rare occasions. We depend on the rectal examination and find it satisfactory. The nurses are instructed in this and become very skilful.

We also maintain clinics six days in the week at the Dispensary, under the charge of the different members of the staff. We require every woman who comes to ask for a card at the dispensary, which means free service, to be examined. Measurements and blood pressure are taken, urine analysis is made, and we know just what we have to expect. If there is anything pathologic in her condition, the nurse in charge of the social service of the hospital and dispensary, visits the patient if she does not come back every week or two weeks. The result is that when our doctors go to the confinement they can turn back to the record and have a complete history of the case. This obtains in ninety per cent of the cases we take care of.

The patients who are in any danger either from malformation of the pelvis or symptoms of threatened eclampsia, or other disturbances, are given free service in the hospital if they cannot pay anything.

Now in regard to the question of rural obstetrics I want to offer this as a suggestion. If it is possible to care for these people in the poorest kind of slum homes and do absolutely clean work—with 32,000 women taken care of, our death rate is one-tenth of one per cent for mothers—I think it would be not only possible but highly practicable to provide similar service at rural centers. Bags such as we use, could be kept ready for use at the center, so that when the doctor is called to a case all he has to do is to get the bag that is packed with everything he needs. If we can obtain the results we do under the dreadful conditions we meet, I am sure equally good results could be obtained in rural communities.

The doctors we train go to every state in the Union, and I am sure they are not going to make the mistakes that are usually laid at the door of the rural practitioner. I listened to the remarks on the subject of sepsis at one of the other sessions. I know of two instances of mortality in the Chicago Lying-in Dispensary. One was a case in which a woman received a gonorrheal infection about four days before she was delivered—you cannot lay that to the doctor. In another the history proved she received it from her husband two days after her confinement. The first died, the second had pulmonary embolism, and is partially paralyzed. Doctors are often blamed for septic conditions for which they are in no way responsible and I think we should take more cognizance of the possibility of infection in the home itself than we have done.

The Chairman: I am sure we are all glad to hear Dr. Lapham's enthusiastic account of the work of the Chicago Lying-in Hospital. I have watched the work of the Boston Lying-in Hospital on similar lines, and Dr. Schwarz is doing much the same in St. Louis. In many ways it is the ideal which obstetricians would like to see more generally realized.

Dr. Schwarz said that his hospital could care for only a part of the obstetrical cases in St. Louis. What about the women in our cities who are not

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reached by hospital service such as has been described by Dr. Schwarz and Dr. Lapham? Whose responsibility is it to see that they get adequate care?

The plan has been tried of using the young graduate who is interested in obstetrics, and who often has the time and is willing to take up the work. But the minute we attempt to introduce this system, the patients come back and say that the women in the vicinity of the hospital get the service for nothing, why don't they? In other words, you have established a standard of no fee. I hope health insurance is going to make the whole thing even so that we shall not have to meet that problem.

Dr. Lapham: May I reply?

The Chairman: We shall be glad to have you do so.

Dr. Lapham: Our social workers investigate the cases. If people are able to pay for the service we refer them to our young doctors who are graduates of the Dispensary, and who are glad to take them for a reduced fee. I want to tell you also where part of the money comes from. The Mother's Aid Club of Chicago started in 1904 with a membership of eight women. It now has 800 members, $92,000 assets. The Mother's Aid Association built the hospital. When the new building, which will accommodate 150 patients, is ready, the building now occupied will be used for emergency pavilions, to take care of septic cases which are the result of mistakes of doctors or midwives or the result of some infection, so that we shall not have to have any infection in the hospital.

Dr. J. M. Beffel, Milwaukee: There are two phases of the problem that we must consider. One of them is the care of the indigent mother; the other is that of reaching every mother—a constructive problem. It strikes me we are all working at cross purposes when we talk simply of the relief of the indigent. If the problems of maternal morbidity and mortality and of infant morbidity and mortality are going to be solved they must be gotten at scientifically and we must consider 100 per cent of the mothers and 100 per cent of the babies born. The time has come for us to get beyond the point of simply thinking of relief work, when we ought to be thinking of the solution of the problem of better obstetrics for the community as a whole instead of a small portion of it. But I would urge that any plan take into consideration its application to 100 per cent of the mothers. It is no more impracticable than to demand that every child from six to sixteen be put into the schools and under the supervision of the community. It is my opinion that a plan should be provided for the care of every baby born into the community. It can be done. How are you going to do it?

In Milwaukee we started to find the answer to the question which was asked just now and which Dr. Lapham answered and yet did not answer. You can get your unit of cost, by trying your experiment in a selected district that is more or less cosmopolitan, and where conditions as far as possible are uniform. We selected a district on the south side, comprising thirty-three square blocks (in 1911). In it we placed three nurses and a head nurse, and

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organized our child welfare station under the municipality. Our four nurses made a survey of every home in the district, and found how many babies under one year of age there were in each home; made a record of every baby in the district; knew every mother and the social conditions of every home. Careful records were kept of conditions in each home. When they started the work in September, 1911, our nurses took under their care 365 mothers and babies. As fast as the babies came to the age of one year they were dischargd and others were taken on until the four nurses had the care of approximately 500 babies. The cost was not much over $4000 for the four nurses and the care of 500 mothers and babies.

We studied the conditions in the district and determined the unit of cost for care per baby during the year. We did not attempt to give relief work. Nurses taught the mothers how to care for the babies and for themselves before the babies came, so they did both infant welfare work and prenatal work. This was carried on for the years 1911-1912 to September 1st. During this time thousands of calls were made. The infant death rate in that ward was 15 per cent, or 150 per thousand. By the end of the year it had been reduced for the year to 100 per thousand, a reduction of 33 1-3 per cent.

We went to the Town Council and proposed that they give us $65,000 and we would apply the system to the whole city. They did not make the appropriation, but we did change conditions considerably, and our annual appropriation has gradually been increased from $5,000 until this year it amounts to $26,000. Today we have nine stations in Milwaukee, and fourteen nurses doing constructional work instead of four.

It seems to me that the way to attack this problem is to establish the unit of cost first, and then apply it to the city scientifically. I would like to urge this Association to inaugurate and carry through such a plan in some city, supervise the obstetrical and infant welfare work, and get a unit of cost of caring for the mothers and the babies, so that this information will be available to any community by which it is desired.

The Chairman: We each bring in the point of view of a different city at this round table talk, and I believe we have had a great contribution this afternoon in the 100 per cent idea, because 100 per cent must come to be considered, especially if we are going to have the health insurance.

Mrs. G. A. Hipke, Milwaukee: After all, the only excuse for the existence of any of our private organizations is for purposes of demonstration. We are grateful for the message brought by Dr. Lapham. We have copied their methods here very greatly, and such success as we have had I believe is due to that fact.

We are trying to demonstrate that it really is not going to be such a great expense to the community at large to take care of its mothers. In our institution we have ninety per cent charity work and ten per cent pay work. The pay work will cover, I should say, forty-five per cent of the running cost. Of course if such an institution became a municipal one it would cost more money.

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We have emphasized prenatal work. Our still births are one and one third per cent, and our death rate for mothers is very low. In the first five years we did not have a death. Dr. Schwarz spoke of antagonizing the physicians by this work, and we have done that here, but I think as the work progresses the physicians will realize that instead of taking away we are really adding to their practice, because, through the continuous agitation the mothers' eyes have been opened to the necessity of calling in the physician and getting proper care.

The Chairman: These contributions are most interesting. There is one point I have perhaps misunderstood, that I think was emphasized by some investigators this morning. Many of us feel that the care of a normal case, except possibly primipara, should be in the home. Some say the hospital is the ideal. When it is an abnormal case I am willing to admit it, but the care of the normal case I rather hope will remain in the home, and that we will succeed in instituting improvements in the home conditions which will make such care approach the ideal. I am sure that the results we have had, so far, have justified that hope. Dr. Beffel spoke of the unit of cost. I happen to know that at the Boston Lying-In Hospital where they care for 2000 cases annually (2856 cases in 1915) the average cost for the care of hospital case is $45.32. The patients who live within the city limits are asked to pay $30, if they can; those whose homes are outside the city limits are asked to pay $40. By using students in the out-patient service, they are able to care for the patients in their own homes, for an average of 80 cents per patient. That arrangement could not be duplicated without student service.

A Speaker: The car fare would be more than that!

Dr. Schwarz: They ride on foot!

The Chairman: The patients were asked to pay something to the hospital, if possible for this out-patient service, and the average amount paid was $2.32. The total amount paid by out-patients to the hospital during the year amounted to $2,435.10. But these are not figures upon which you could base an estimate of the cost of service of this sort elsewhere.

Dr. Beffel: You cannot solve the obstetrical problem by establishing hospitals any more than you can solve the tuberculosis problem that way. It is the work in the homes that has to be done, not relief work, but educational work.

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PEDIATRICS

Thursday, October 19, 1916, 8.15 p. m.

JOINT SESSION WITH THE MILWAUKEE COUNTY MEDICAL SOCIETY

Public Museum, Lecture Hall

COMMITTEE

Chairman

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DR. FRANK P. GEGENBACH, Denver

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DR. WALTER R. RAMSEY, St. Paul

DR. HENRY R. TULEY, Louisville

TOPICS

Measles and Pertussis: Morbidity and Mortality in Infancy

Measles from the Standpoint of Prevention

Pertussis from the Standpoint of Prevention

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THE MORBIDITY AND MORTALITY OF PERTUSSIS AND MEASLES WITH PARTICULAR REFERENCE TO AGE

ADDRESS BY THE CHAIRMAN

BORDEN S. VEEDER, M. D., St. Louis

Before taking up each disease separately it is of interest to note the position occupied by measles and pertussis in relation to the chief causes of mortality in infancy and childhood. In Chart I the percentage of deaths from different causes (74 per cent of the total) to the total number of deaths in children under two years (infancy) and in children under ten years is graphically shown. With the exception of accidents, birth injuries and congenital malformations, these represent the chief causes of deaths at this period of life. The great preponderance of deaths due to diarrhea and enteritis, premature birth and congenital debility (marasmus, atrophy, etc.) result in 65.7 per cent of all of the deaths under ten years occurring in the first year of life and about 80 per cent in the first two years. The percentage distribution of deaths in the first ten years of life is shown in the small insert in Chart I.

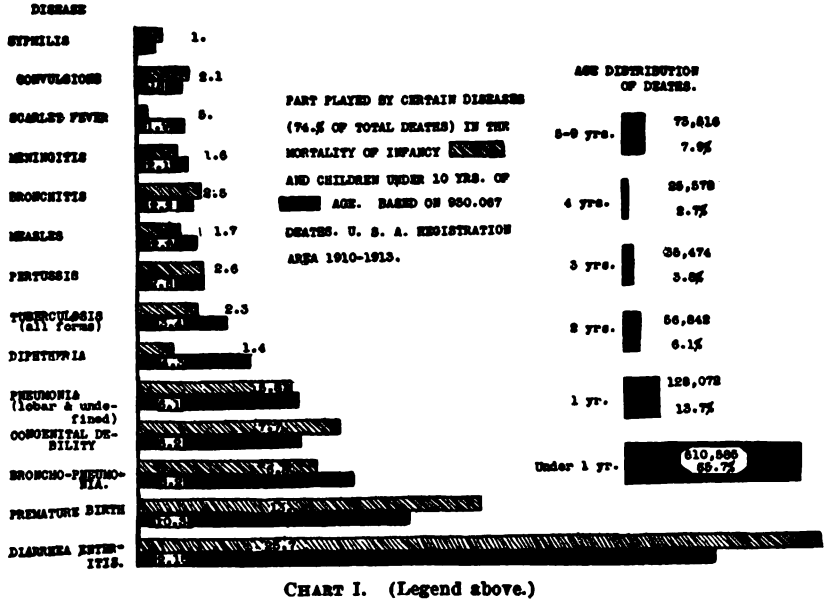

CHART I. (Legend above.)

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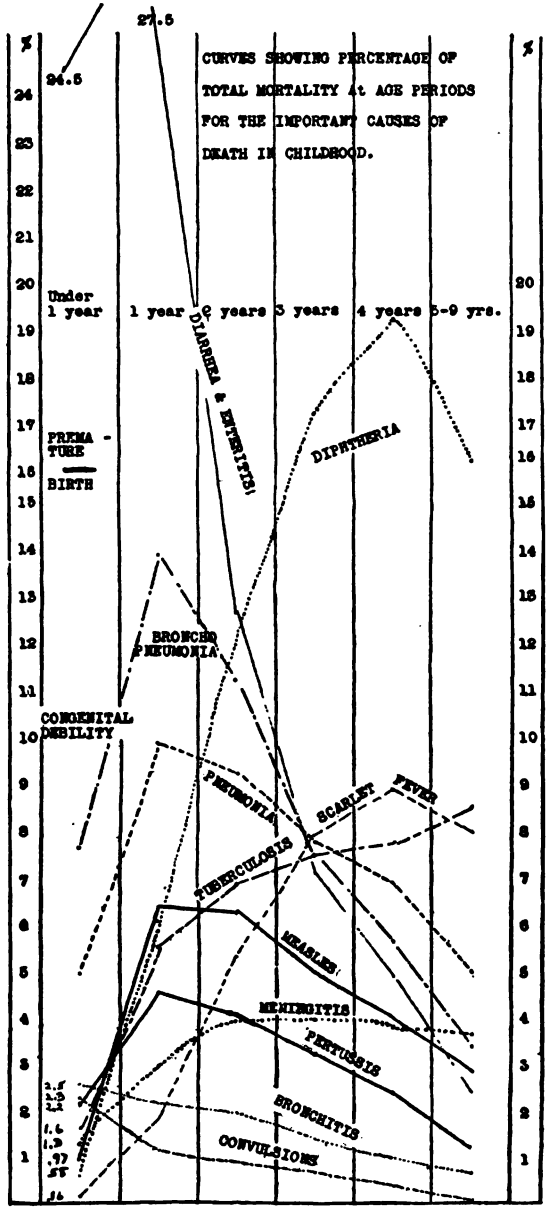

CHART II. (Legend above.)

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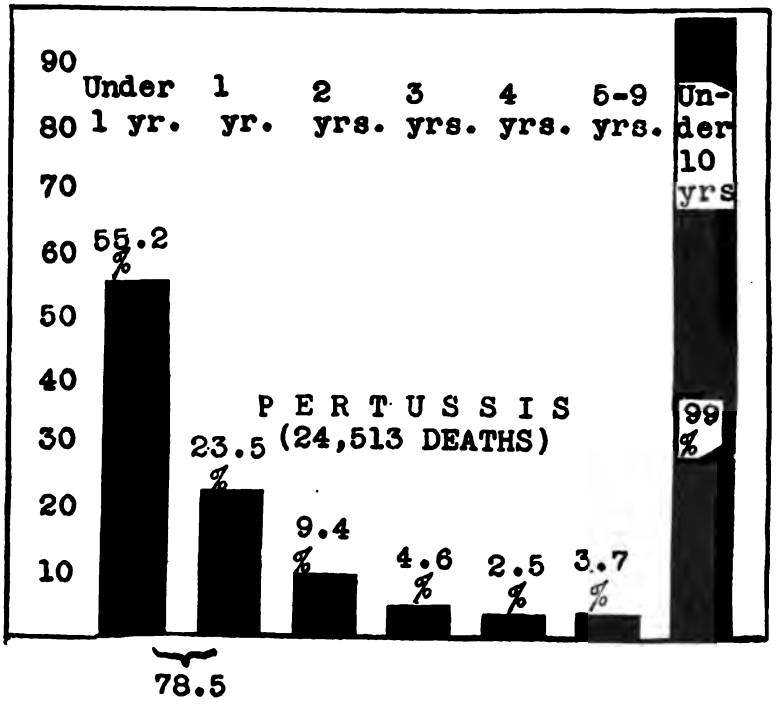

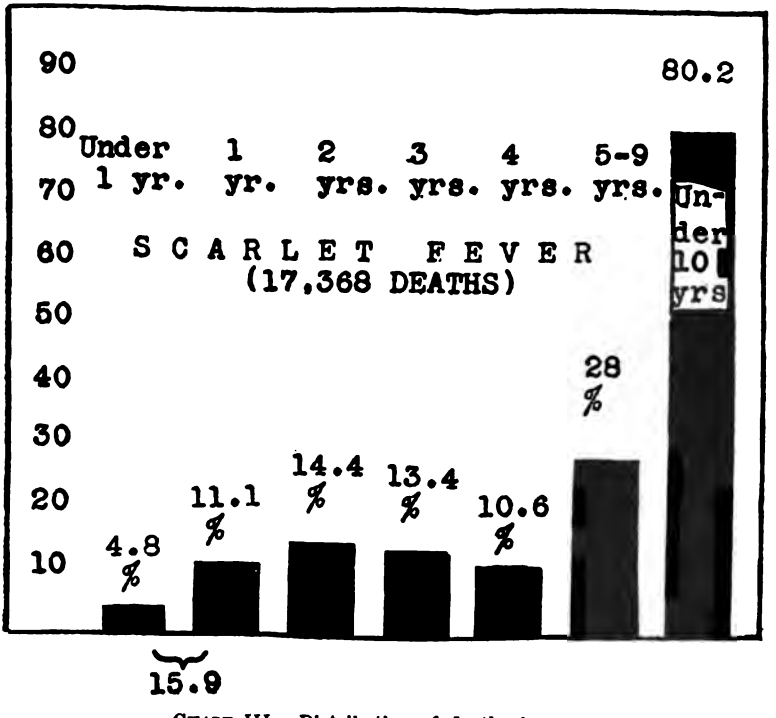

CHART III. Distribution of deaths by age.
U. S. Registration Area 1910-13.

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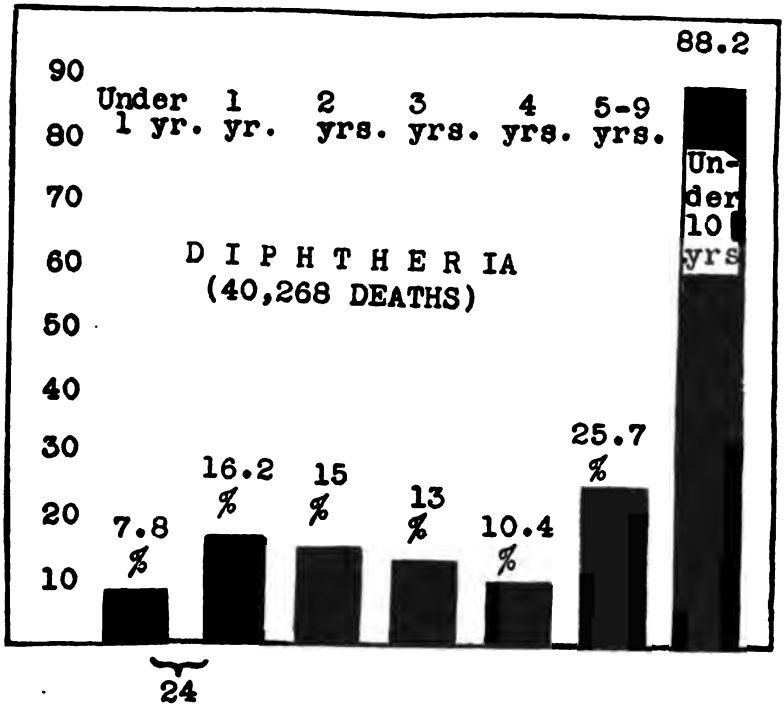

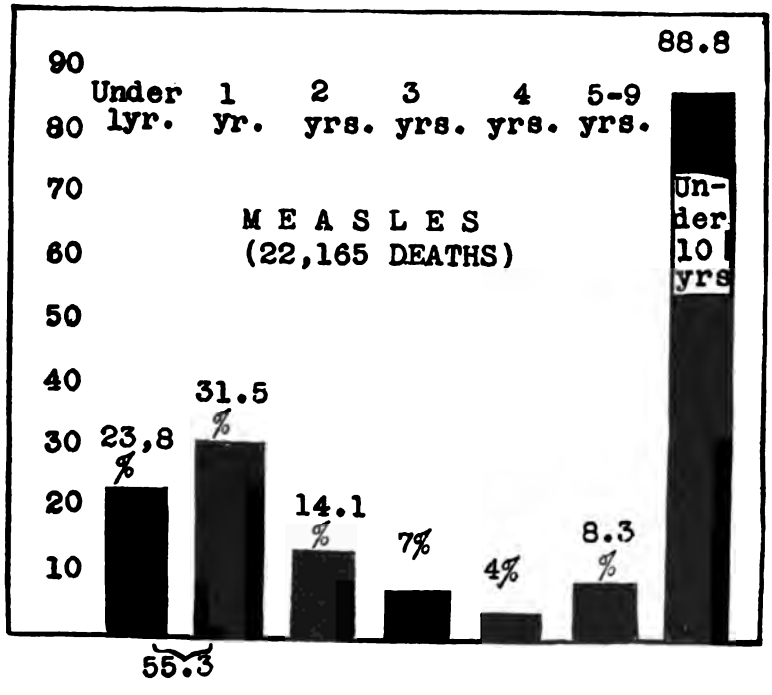

CHART III. Distribution of deaths by age.
U. S. Registration Area 1910-13.

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In Chart II the curve of each disease is plotted by year periods up to five years, and for the 5-9 year period. This chart shows the relative position of the different diseases as a cause of death at each age period. As there is such a preponderance of deaths in the first year of life the absolute number of deaths from a given cause may be very much larger in the first than in any succeeding year, but its relative position may be lower.

Although it will be seen that measles and pertussis together form but 5 per cent of the total mortality under ten years and 4.3 per cent of the mortality of infancy, Chart III shows why these diseases may be regarded as suitable for discussion by this society. In Chart III the age distribution of the deaths from these diseases is shown. Over one-half (55.2 per cent) of the deaths from pertussis occur in infants under one year and over three-quarters (78.5 per cent) under two years. The mortality of measles is not so largely confined to infancy but nearly one-quarter (23.8 per cent) occurs in the first year of life and, as the result of the high death rate (31.5 per cent) for measles in the second year, over half of the deaths (55.3 per cent) in infants under two. These two diseases are in marked contrast to the two other contagious diseases of childhood which have an appreciable mortality and hence similar charts for diphtheria and scarlet fever are given for purposes of comparison.

Morbidity of Pertussis

Morbidity reports and statistics are very unsatisfactory. In many states and communities notification is of recent date and not compulsory for many diseases, and even when supposedly compulsory is very imperfectly carried out. This is due to a number of causes among which may be mentioned the lack of interest of some physicians who do not appreciate its importance, lack of power to enforce notification, questionable diagnosis, and the fact that many cases are never seen by physicians unless the child becomes extremely ill. At the present time measles is a notifiable disease in 38 of our 52 states and territories, and pertussis in 36,[1] but the percentage of unreported cases is unknown. Examination of the Public Health Service records shows a marked fluctuation above and below the mean fatality rate that cannot be accounted for by differences in the virulence of epidemics alone, but

[1] Reprint No. 332, Public Health Reports, 1916—xxvi—881

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the high fatality rate for certain states is much more reasonably accounted for by poor notification. So no reliable data for the frequency of pertussis as a whole are available. Luttinger[2] in a recent survey in New York found that only 10-15 per cent of the cases of pertussis were reported. We know the attack rate is less than for measles but that under certain conditions—as in institutions—it may attack a very high percentage of suscepts. In some of the larger cities notification is perhaps more thoroughly carried out and the following figures showing the number of cases per 1,000 of population are taken from the records of their health departments. St. Louis: 1914, 1.9; 1915, 1.9; Philadelphia: 1913, 0.9; 1914, 2.5. In Table I the number of cases and the attack rate per 1,000 of population is shown for a five-year period for Washington, D. C.

Table I

Showing the number of cases and attack-rate per 1,000 of population for pertussis. Washington, D. C., 1908-1912.

Age	Population	Cases	Rate
Under 1 year.....	27,415	486	17.7
Under 5 years.....	133,255	2,213	18.1
Under 10 years.....	259,760	3,578	13.7
All ages	1,652,870	3,846	2.4

Table II

Showing the distribution of the cases of pertussis by age, and the fatality rate for each age period, for Aberdeen, Scotland. 1891-1900. (Laing and Hay.)

Age	Cases	Per Cent	Deaths	Fatality Rate per 100 Cases
Under 1 year	2,492	16.5	313	12.5
1 year.....	2,327	15.4	235	10.1
2 years.....	2,297	15.2	76	3.3
3 "	2,129	14.1	48	2.2
4 "	1,808	11.9	30	1.6
5 "	1,676	11.1	9	.5
6 "	1,163	7.7	8	.7
7 "	584	3.9	1	.2
8 "	266	1.7	1	.4
9 "	114	.7	0	...
10 "	237	1.5	1	.4

With poor notification figures it is difficult to more than approximately show the age incidence of the disease or of the case fatality rate. In Table II the age distribution and the fatality rate by age as given by Laing and Hay[3] for Aberdeen, Scotland, are shown. According to these figures the yearly incidence for the first four years is nearly the

[2] Luttinger: Am. Jour. Dis. Child., 1916—xii—290.
[3] Laing and Hay: Whooping Cough, Aberdeen, 1902.

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same, but the number of deaths per 100 cases decreases very rapidly after the second year. This is shown graphically in Chart IV.

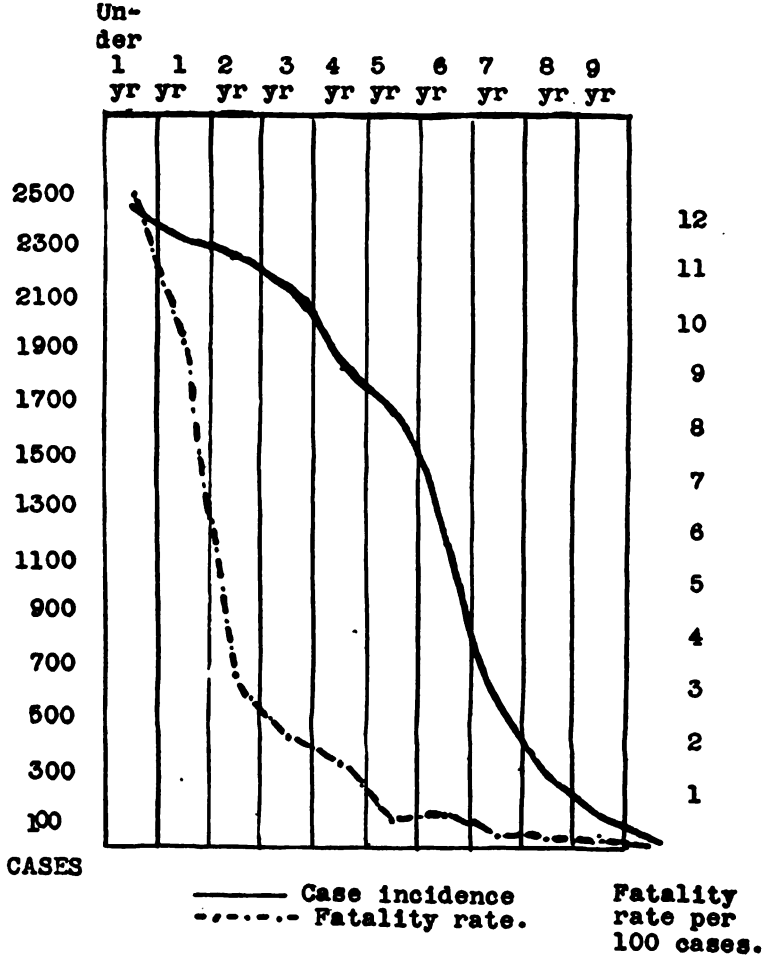

CHART IV. Number of cases of pertussis and fatality rate by age. Aberdeen, 1891-1900. (Laing.)

The case fatality rate in infancy—between 10 and 12 per cent—is high in our opinion and one cannot but question the reporting of all cases. A smaller series of cases from Budapest gives a higher age incidence for infancy (45 per cent of the total) than the Aberdeen statistics.

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In Table III the age incidence for 10,000 cases collected by Luttinger in New York is given. About 40 per cent occurred in infancy.

Table III

Showing age incidence of 10,000 cases of pertussis in New York City. (Luttinger.)

Age	Cases	Percentage
Under 1 year.....	1,940	19.4
1 year, under 2.....	2.019	20.1
2 years, under 5.....	4,010	40.1
5 years, under 15.....	1,799	17.9
15 years and over.....	232	2.3

Mortality of Pertussis

According to Crum[4] 1 per cent of the grand total of deaths is due to pertussis—a figure based on the mortality records for 24 countries over a five-year period and representing a population of nearly two billions. The annual average death rate is 8 per 100,000 of population. Crum's extensive study covers a number of factors as differences in death rate due to sex, race, season and climate, which cannot be considered within the limits of this paper.

Table IV *

Showing the annual death rate from pertussis for the Registration Area for the years 1904-1913, the percentage of total population in the Registration Area, and based upon this the number of yearly deaths from pertussis in the United States.

Year	Death Rate per 100,000 in Registration Area	Percentage of Population in Registration Area	Number of Deaths in Total Population
1904	6.5	40.4	5,369
1905	10.6	40.4	8,926
1906	15.1	48.9	12,961
1907	11.3	49.2	9,882
1908	10.6	52.5	9,444
1909	9.6	56.1	8,706
1910	11.4	58.3	10,525
1911	11.3	63.1	10,614
1912	9.3	63.2	8,886
1913	10.	65.1	9,716
Average	10.5	53.7	9,502

*In the preparation of this paper the mortality statistics of the U. S. Census Bureau for the Registration Area have been utilized to a large extent. Considerable care has been taken in recent years in classifying deaths and we can regard these figures as accurate as any available. It may be that some deaths classified with pneumonia and bronchopneumonia belong to the measles and pertussis groups, although where these are given in death reports as the cause of death complicating measles or pertussis, the latter are used in classifying the deaths. It is reasonable to regard any error as leading to too few deaths being charged against these diseases.

[4] Crum: A Statistical Study of Whooping Cough: Am. Jour. Pub. Health, 1915. v. 994.

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In Table IV the yearly death rate from pertussis for the 10-year period, 1904-1913, for the Registration Area of the United States is shown and based upon this rate the total number of deaths for the entire continental United States. Naturally such a calculated figure is only approximate, as it is based upon the actual figures for only 53.7 per cent of the total population. But we can safely say that during this ten-year period between 90,000 and 100,000 deaths from pertussis occurred in the United States, or that each year over 9,000 children die from such a "mild and uninteresting" disease as whooping cough. The annual average death rate for these ten years is 10.5 per 100,000 of population with fluctuations of from 6.5 in 1904 to 15.1 in 1906. In the last few years the death rate has been more constant. As the average death rate for the last four of the ten years is 10.5, or the same as for the entire ten, the deaths in these four years have been used in computing the remaining tables.

What is of particular interest to the student of infant mortality is the age distribution of the deaths from pertussis. In Table V the 24,779 deaths from this cause in the Registration Area for the four years are subdivided according to the age at which death occurred, and this is graphically shown in Chart III.

Table V

Showing the age distribution of 24,779 deaths from pertussis. U. S. Registration Area, 1910-13.

Age	Deaths	Per Cent	
Under 1	13.675	55.2	Infancy 78.7
1 year	5,829	23.5	
2 years	2,332	9.4	
3 years	1,141	4.6	
4 years	617	2.5	
5-9 years	919	3.7	
Under 10 years	24,513	98.9	
Over 10 years	266	1.1	

The part played by pertussis in the mortality of each age period in childhood is shown in Table VI and the curve is plotted in Chart II.

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Table VI

Showing the percentage of pertussis deaths to the total mortality at different ages. Figures are average of the total annual and pertussis deaths for Registration Area 1910-13.

Age	Total Deaths	Deaths Due to Pertussis	Percentage of Mortality Due to Pertussis
Under 1	152,646	3,419	2.21
1 year	32,018	1,457	4.55
2 years	14,210	583	4.10
3 years	8,868	285	3.23
4 years	6,394	154	2.40
Under 5 years	214,142	5,898	2.75
5-9 years	18,379	230	1.25
Under 10 years	232,521	6,128	2.60

The figure is obtained by dividing the number of deaths from pertussis for a given age by the total mortality for that age. We find that while 55 per cent of the pertussis deaths occur in the first year of life and 23 per cent in the second, pertussis is twice as big a factor in the mortality of the second year as it is in the first. This is due to the mortality of the first year of life being some five times that of the second.

There are many other points in regard to the mortality of pertussis which cannot be discussed in this paper but in closing the discussion of pertussis I wish to present part of a table (Table VII) from Crum showing the primary complications of pertussis based upon 1,000 cases from the mortality experience of the Prudential Insurance Company, as the data are most interesting and instructive.

Table VII

One thousand fatal cases of whooping cough, showing primary complications. (Prudential Industrial Mortality Experience, 1911-1913.)

Complications	Number of Deaths Both Sexes	Per Cent Distribution
Broncho-pneumonia	286	28.6
Pneumonia	270	27.0
Bronchitis	56	5.6
Other respiratory diseases	15	1.5
Meningitis	44	4.4
Cerebral congestion	9	0.9
Heart complications	25	2.5
Digestive complications	79	7.9
Nephritis	8	0.8
Dysentery	6	0.6
Tuberculosis of lungs	9	0.9
Other miscellaneous	45	4.5
No complications	148	14.8
Total	1,000	100.0

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Morbidity of Measles

The data are more extensive for the morbidity of measles and may be considered as more reliable than the pertussis data. We know that measles is perhaps the most highly infectious of the communicable diseases and that a very high percentage of suscepts is attacked. The incidence in a given district or area varies according to the number of non-immune at a given time, hence wide variation is found in statistics for the attack rate. This periodicity of the morbidity and sequentiality of the mortality is well known, and is illustrated very well by Chart V taken from Paul Muller,[5] which is based on the morbidity statistics of 14 European cities, and shows seven wave-like epidemics occurring over a space of 11 years. Some charts of Crum show this periodicity for American cities. Because of this epidemic character of the incidence it is difficult to estimate the attack rate. It is known that in certain epidemics 80 or more per cent of the suscepts have acquired the disease.

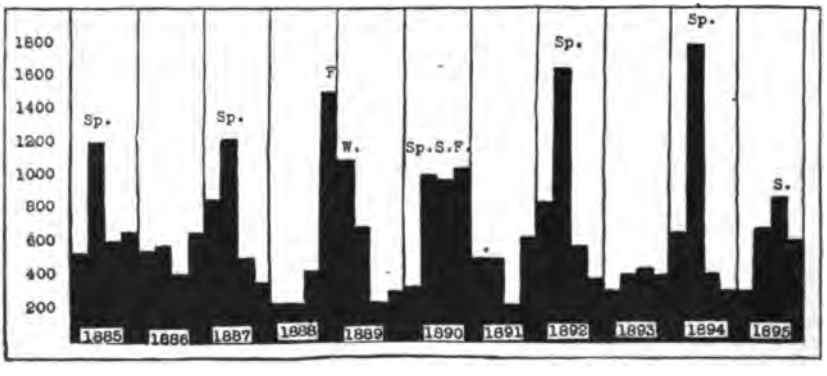

CHART V. Showing wave-like periodicity of measles. 7 epidemics in 11 years. Based on measles morbidity in 14 European cities. (After P. TH. Muller.) Sp.—Spring. S.—Summer. F.—Fall.

[5] Muller: Vorlesungen uber Allegemeine Epidemologie. Jena 1914.

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In Table VIII the age incidence and fatality rate for different ages in childhood are shown for over 40,000 cases in Aberdeen, Scotland.

Table VIII

Showing the distribution of measles by age and the fatality rate for each age period. Aberdeen, Scotland. 1883-1902 (from Crum). (Compare with Table II for pertussis).

Age	Cases	Per Cent	Deaths	Fatality Rate Per 100 Cases
Under 1 year.....	3,034	7.5	426	14.
1 year	5,222	12.9	526	10.
2 years	5,195	12.8	178	3.4
3 years	5,053	12.5	82	1.6
4 years	4,786	11.8	43	.9
5 years	5,352	13.3	35	.7
6 years	4,628	11.5	21	.5
7 years	2,818	7.	14	.5
8 years	1,258	3.1	5	.4
9 years	672	1.6	4	.6
Over 10 years	2,206	5.5	12	.5
	40,224		1,346	3.3

This table shows that the cases of measles are very evenly distributed throughout early childhood (after the first year of life) but that the case fatality rate shows a rapid fall after the first year. This is shown graphically in Chart IV where a comparison with pertussis may be made. The incidence curves for age differ somewhat but the case fatality curves are strikingly similar.

The case fatality rate for the entire group of cases shown in Table VIII is 3.3 per 100 which is somewhat high. In the three years 1912, 1913, 1914 there were 471,742 cases of measles and 8,331 deaths reported in 33 states, which gives a case fatality rate of 1.76 per 100 cases. The fatality rate varied in these states from 0.23 per 100 cases in Nevada (434 cases, 1 death) to 7.35 in Rhode Island (816 cases, 60 deaths.)[6]

Mortality of Measles

According to figures collected by Crum,[7] measles causes slightly more than 1 per cent of all deaths in the temperate zone (366,262 in a total of 33,626,651 deaths in 22 countries in the five-year period 1906-1910.) The percentage of measles deaths varies considerably in different countries—that for the United States in recent years being between 0.7 and 0.8 per cent of the total deaths.

[6] Public Health Reports: 1916—xxxi—295. Reprint P. H. R. No. 328.
[7] Crum: A Statistical Study of Measles. Am. Jour. Pub. Health, 1914. iv—289.

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In Table IX the mortality rate per 100,000 of population from measles for the Registration Area of the United States is shown for the years 1904-1913, and based upon this the approximate number of deaths in the United States during this ten-year period. The average annual

Table IX

Showing the annual death rate from measles for the Registration Area for the years 1904-1913, the percentage of the total population in the Registration Area, and based upon this the number of yearly deaths from measles in the United States.

Year	Death Rate Per 100,000 in Registration Area	Percentage of Population in Registration Area	Number of Deaths in Total Population
1904	11.	40.4	9,086
1905	7.5	40.4	6,316
1906	12.1	48.9	10,386
1907	10.	49.2	8,745
1908	9.9	52.5	8,818
1909	9.6	56.1	8,706
1910	12.3	58.3	11,334
1911	10.	63.1	9,392
1912	7.	63.2	6,688
1913	12.8	65.1	12,437
Average	10.2	53.7	9,210

death rate from measles for these 10 years was 10.2 per 100,000 of population, or approximately the same as that for pertussis, hence we can say that on an average over nine thousand deaths occur annually from measles in the United States. Because of the periodicity of the disease the mortality per 100,000 of population differs markedly in the same area in different years, in different communities in the same year, and in the yearly death rate. Thus in one year there may be twice as many deaths from measles as in another, as occurred in the years 1912-1913 for example, but the ten-year average gives a fairly accurate index of the mortality rate.

Table X

Showing the age distribution of 24,936 deaths from measles. U. S. A. Registration Area 1910-1913.

Age	Deaths	Per Cent	
Under 1 year	5,940	23.8	55.3
1 year	7,865	31.5	
2 years	3,527	14.1	
3 years	1,752	7.	
4 years	998	4.	
5-9 years	2,078	8.3	
Under 10 years	22,165	88.8	
Over 10 years	2,771	11.2	

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That these deaths are largely confined to childhood is shown in Table X in which the distribution by age of over twenty thousand deaths from measles in the United States is tabulated. It shows that 80 per cent of the measles deaths occur in early childhood (under five years) and over half (55.3 per cent) in infancy. The age distribution of deaths is shown graphically in Chart VI.

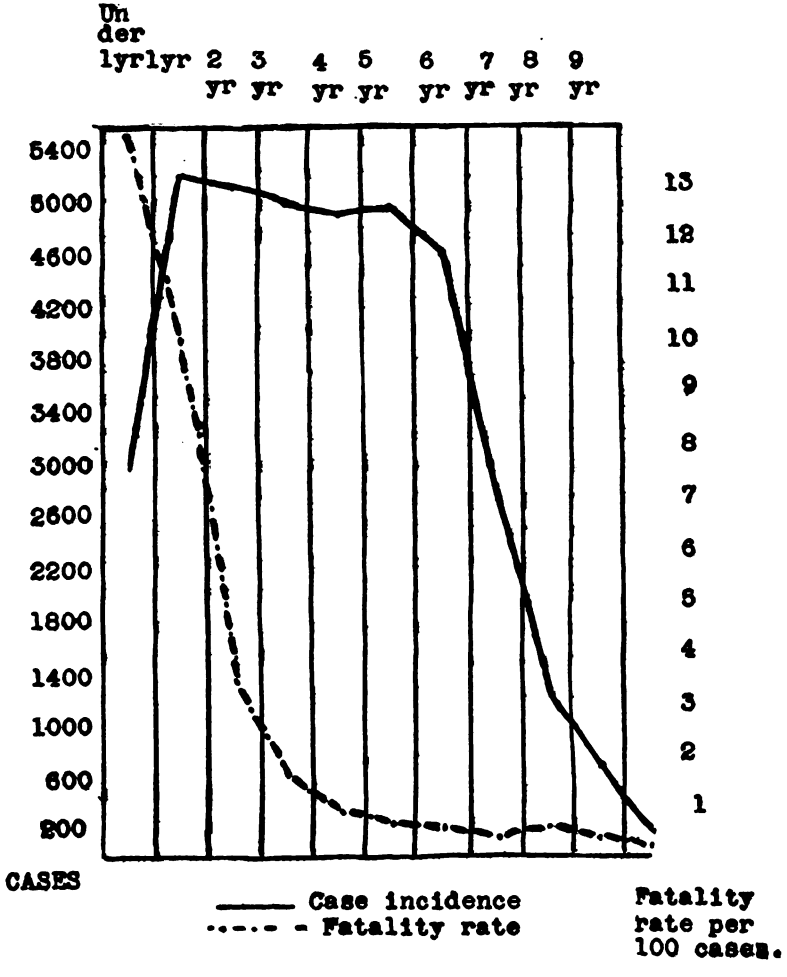

CHART VI. Number of cases of measles and fatality rate by age. Aberdeen, 1883-1902.

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Table XI

Showing the percentage of measles deaths to the total mortality at different ages. Figures are yearly average of the total annual and measles deaths for Registration Area, 1910-1913.

Age	Total Deaths for Age	Deaths from Measles	Percentage of Mortality Due to Measles
Under 1 year	152,646	1,485	0.97
1 year	32,018	1,966	6.14
2 years	14,210	882	6.13
3 years	8,868	438	4.9
4 years	6,394	250	3.9
Under 5 years	214,142	5,021	2.3
5-9 years	18,379	520	2.8
Under 10 years	232,521	5,541	2.4

The percentage of the total deaths at different age periods due to measles is shown in Table XI. It will be seen that measles reaches both its absolute and relative height as a mortality factor in the second year of life. In pertussis the absolute height occurs under one year but the relative height in the second year.

In measles as in pertussis complications of the respiratory tract form the chief factor in the mortality. From 60 to 80 per cent, depending upon the season of the year, of the primary complications of measles are respiratory in nature. Institutional life, it is well known, tends to increase markedly the case fatality rate. Thus Holt reports that in 300 cases in two institutional epidemics among children under 3 years, some 40 per cent developed pneumonia and 70 per cent of these died. Overcrowding is also a contributory factor to a high mortality rate as has been shown by studies in Glasgow, among immigrants by Wilson and by the high incidence and mortality among soldiers in barracks. Many other factors as sex, climate, season, housing, race, etc., which are of interest in connection with the morbidity and mortality of measles are necessarily omitted in this paper.

Summary

A study of the morbidity and mortality of measles and pertussis brings out certain facts. Perhaps the most important of these is that, on an average, between 9,000 and 10,000 deaths from each disease take place annually in the United States. While the death rate as a whole, and for certain diseases as tuberculosis, diphtheria, diarrhea and enteritis under two years, and typhoid fever, show a decrease in the registration area in the past 15 years, that for measles and pertussis

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has remained practically the same. Surely no disease that causes 1 in every 100 deaths, or that rolls up an annual toll of between nine and ten thousand lives a year is insignificant or unimportant.

A second point is found in the age distribution of the deaths in these two conditions. Nearly 80 per cent of the pertussis and over half of the measles deaths occur in infants. The older the child the lower the case fatality rate. The widespread impression among the laity that it is a good thing to have these common infections of childhood early and get them over with is erroneous. The longer they can be warded off, so much less the chance of fatal or damaging complications.

The mortality of the first year of life is greater than the combined mortality of the rest of childhood. A part of this—birth accidents—congenital malformations, etc., may be termed fixed and is irreducible. But far the largest part is preventable to a certain extent. Somewhere between 5 and 10 per cent of the mortality which may be lessened is due to measles and pertussis. It is the hope of the committee for the pediatric section that the discussion tonight may arouse some interest in these ever present and much neglected diseases.

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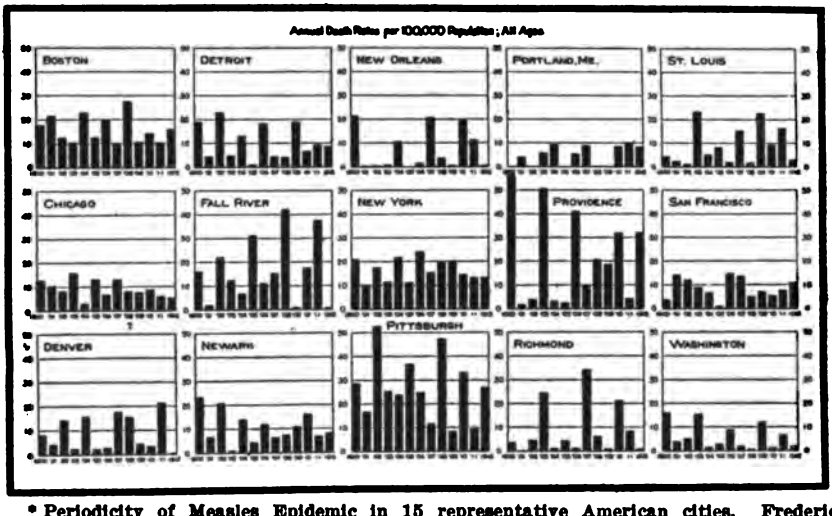
MEASLES FROM THE STANDPOINT OF PREVENTION

J. G. WILSON, M. D., Assistant Surgeon, U. S. Public Health Service, Ellis Island, New York

Legislation Affecting Measles

From the standpoint of prevention, notification and quarantine have not materially affected the incidence of measles epidemics. It may be possible to show that particular epidemics have been shortened by measures taken with that end in view, but if we review the situation as a whole, we will find that there is no constant relation existing between laws regulating the control of the disease and the rise and fall of epidemics. Frederic Crum tabulated the periodicity of measles outbreaks in 15 representative American cities for 13 years from 1900 to 1912 inclusive.* A study of his chart does not show any tendency whatever towards constant abatement either in the frequency of epidemics or their severity.



* Periodicity of Measles Epidemic in 15 representative American cities. Frederick Crum. Publication of Prudential Life Insurance Company.

Realizing the failure of notification and quarantine to effectually prevent the spread of measles, there is a tendency on the part of some health officers to relax the enforcement of existing laws. As early notification and prompt isolation are from a theoretical standpoint entirely adequate to prevent epidemic measles, it would seem that some

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way ought to be found to put the theory in practice. Effort in this direction has so far been exerted in a diversity of ways. This is shown by an analysis of the various state laws and regulations dealing with the subject. Up to January 1, 1916, 38 states out of the 52 states and possessions of the United States required notification.†

Some states require notification and placarding of the house only. Some require strict quarantine of all the members of the household, some of the patient only, and others of the patient and exposed persons. If we consider cities as well as states, we find that the duration of quarantine varies in different communities from five days to three weeks. From a consideration of these facts, it is evident that one of the first essentials is, not more drastic legislation, but a standardization of existing laws and regulations and their uniform extension to all communities.

Given a uniform and sensible notification and isolation law in all the states, the question would then arise how best to apply that law.

Applications of Notification and Isolation Regulations

In the present state of our knowledge, prompt isolation of beginning cases is undoubtedly the only way in which epidemics may be nipped in the bud. As a rise in temperature is the first clinical symptom of the period of invasion, it follows that prompt isolation of all susceptible persons with fever, however slight, should prevent serious measles outbreaks. Experience at the Immigrant Station at Ellis Island, New York, in large measure substantiates this opinion. Children under 14 years of age have comprised 10 per cent of all arriving aliens at that port for the past ten years. There have never been wide variations from this average. Notwithstanding the practically constant distribution of susceptible persons the yearly incidence of the disease has varied greatly.

For different reasons many immigrants are detained in large rooms and dormitories in the general administration building for periods varying from 24 hours to several days. Fresh measles virus is introduced by new arrivals at frequent intervals.

As a consequence of this detention, nearly one-fourth of all our measles admissions have been derived from the waiting rooms and dormitories of the administration building. In an effort to abate as

† Those not requiring notification are: Colorado, Florida, Kansas, Missouri, New Jersey, New Mexico, North Carolina, Oklahoma, Porto Rico, Rhode Island, Tennessee, Texas, West Virginia and Wyoming.—Reprint No. 332 of Public Health Reports.

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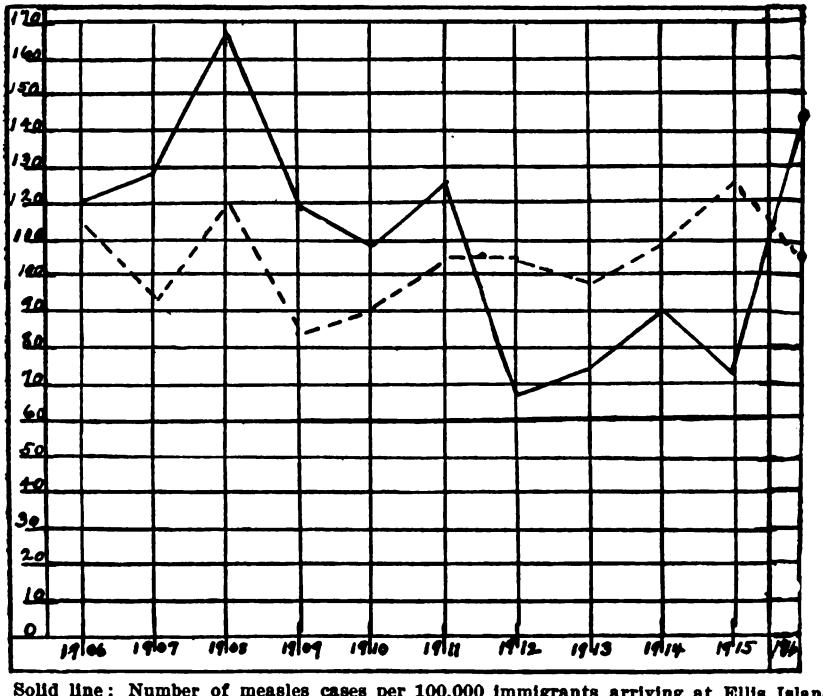
far as possible this undesirable condition, Dr. L. L. Williams, the chief medical officer in 1915, instituted the plan of taking the temperature of all detained children twice every day. All children with temperature of over 99 degrees were promptly isolated. Following this procedure the proportion of cases of measles developing in the detention rooms droppd one half, and in 1916, the practice still being continued by Dr. J. C. Perry, the present chief medical officer, it did not rise above the former level of approximately 25 per cent. This failure to increase took place under conditions when a natural increase of cases from this source was to have been expected, because, during the year ending July 1, 1916, the proportion of measles cases to arriving immigrants, not only increased two-fold, but owing to difficulties in the way of deportation incident to the war, the average period of detention of all immigrants was immeasurably increased, thus making the detention rooms a veritable hot-bed for measles incubation.



Solid line: Number of measles cases per 100,000 immigrants arriving at Ellis Island 1906 to 1916.

Broken line: Number of persons under 14 years of age per 100,000 immigrants arriving at Ellis Island 1906 to 1916.

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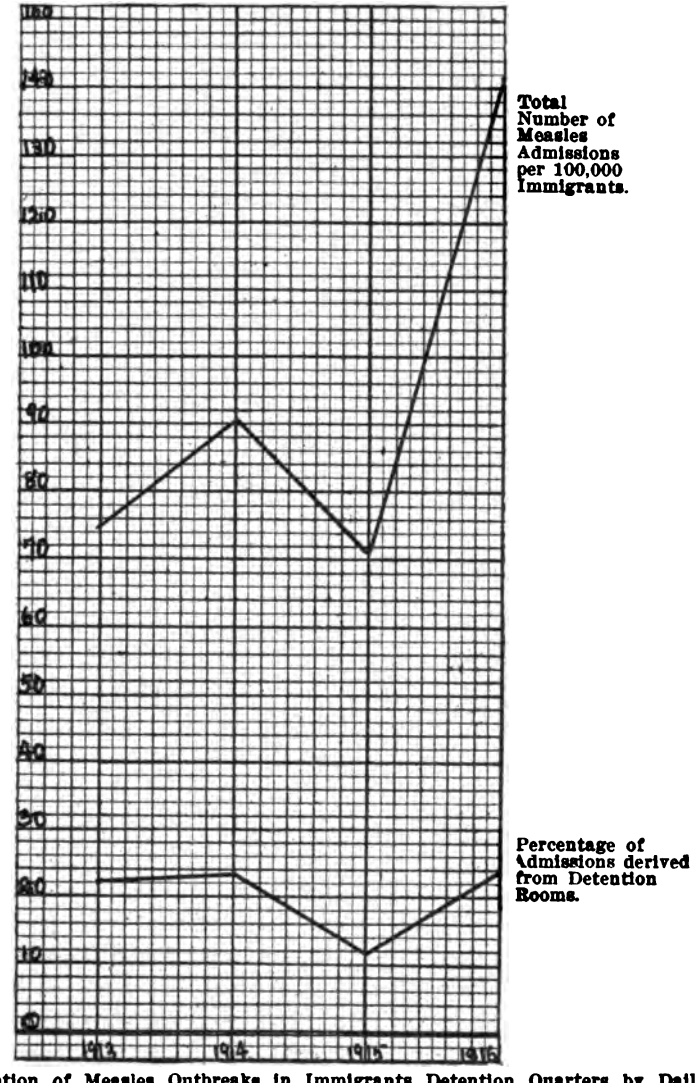

Prevention of Measles Outbreaks in Immigrants Detention Quarters by Daily Temperature Records of all Children. Temperature Taking Started in 1915.

If so desirable an effect can be produced under such conditions of crowding and close association as prevail at Ellis Island, it would seem that similar procedures, introduced in the homes and schools at the

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time when the first case of measles occurs in the vicinity, ought to go a long way towards preventing general epidemics.

Taking the temperature of the non-immune population involves detail in its practical application which would have to be worked out by co-operation of the family physician, the school authorities and the local health officers. The difficulties to be encountered should not be very great.

Assuming then that a plan be evolved in any given community to detect all temperature rises as soon as the first cases appear and an epidemic threatens, the next practical question presenting is that of isolation. This will have to be accomplished through education along two lines. In the first place the private physician must insist on the complete isolation in a separate room in the home of all his susceptible patients who exhibit temperature rises from any ill-defined cause. In other words, the public must be educated to the view that any rise in temperature in children may be due to a contagious disease.

Many homes will be unable to afford proper isolation facilities; this will necessitate early hospitalization of all suspected cases, and this is the second line along which education must be extended. Here, however, it is not the lay public alone which needs education, but it is the private physician, the health officer and the hospital architect who must be taken in hand. So long as the measles death rate in hospitals remains at its present high level, we cannot expect parents to voluntarily risk the lives of their children solely to prevent the spread of infection to others.

Serious Complications, Cross Infections and Death Rates in Relation to Isolation Facilities

There can be no doubt that more success has heretofore actually attended home treatment than hospital, but it can be shown that when hospital conditions are changed so that isolation facilities are adequate, just as great success will attend this method of treatment as has attended the former. There have not yet been constructed any hospitals with absolutely adequate isolation facilities. By such hospitals are meant those in which it is never necessary to take any chances of patients directly infecting each other. This means that every child must be kept in isolation for a period of time that not only absolves it as a source of danger on account of the disease for which it has been treated, but which also covers the incubation period of every other contagious disease which it has *not* had.

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At Ellis Island Hospital there has been an effort to achieve this ideal, but so far the goal has not been reached. There has, however, been great improvement. If we compare the years when isolation facilities have been decidedly inadequate with those when they have been considerably better, the improvement in the results is so marked that we cannot help but believe that it will eventually be entirely possible to eliminate every objection that may be raised to hospital treatment.

The five years elapsed since the hospital was opened July 1, 1912, divide themselves into two distinct groups so far as isolation facilities are concerned.

In 1912 there were only 633 admissions for all causes. Five hundred and two of these were measles, leaving approximately only one-sixth of the hospital population as a possible source of cross infection. Moreover, the admissions were in small groups, so that the hospital was never suddenly overtaxed. That year, therefore, can be classed as fairly good for isolation facilities because there was provision for keeping this one-sixth of the population away from the rest during the greater part of the convalescent period of both groups. In 1913 and 1914, the isolation facilities were poor. In these two years there were 2,256 admitted for all causes; 1,675 of these were measles, leaving one-fifth of the hospital population as a possible source of cross infection. Patients were often admitted in groups of 20 or more at one time. There were not sufficient facilities to even approximate adequate isolation during the greater part of these two years.

In 1915, the total number of admissions for all causes was only 383. One hundred and ninety-one of these were measles, leaving one-half of the population as a possible source of cross-infection. This greater chance was, however, largely offset by the even distribution and small numbers of admissions, so that isolation facilities in reality approximated those of 1912.

In 1916, the chances of cross-infection were the greatest of all. This year there were 960 admissions for all causes, which number almost equalled the yearly admissions in 1913 and 1914. There were 252 measles cases admitted, 22 of which were suffering from a coincident scarlet fever at the time of admission. There were 200 cases of scarlet fever, 11 of whom were suffering from superadded measles. Altogether there were some 300, or one-third of the hospital population which was a possible source of cross-infection to the measles cases. Besides this,

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the admissions were very irregular and often in large groups, over 40 cases having been admitted in the course of a few hours on several occasions. Fortunately, 12 more isolation units had been added and we were able to manoeuver so that we did not have to take chances, except in a few instances. Therefore, this year is grouped among those with fair isolation facilities.

Arranging the years according to isolation facilities and setting opposite each series the case fatality, serious complication and cross-infection, we have the following results:

Series I, Comprising Years 1913 and 1914*

Patients admitted in large groups—often over 20 measles cases inside of two hours—sometimes 40 or 50 in a single day—many cases admitted and necessarily placed in general wards before diagnosis could be absolutely established. The two years 1913 and 1914 are therefore classed in the YEARS WITH POOR ISOLATION FACILITIES.

Of the 1,675 measles admissions for these two years:

21 per cent suffered from serious complications (Bronchopneumonia or enterocolitis.)

3.2 per cent suffered from cross-infection, and the

Case fatality was 10 per cent.

Series II, Comprising Years 1912, 1915 and 1916

In the first year of this series, admissions were evenly distributed, measles cases never coming in large numbers in any given day. There was also a small number of other contagious diseases in the hospital, measles forming nearly five-sixths of admissions for all causes. In the second year of this series the total number of admissions for all causes was so low and distribution so even that facilities were relatively speaking not overtaxed. In the third year of the series there was a very uneven distribution of the admissions and large numbers of other contagious diseases were admitted, but this was largely offset by a substantial increase in the number of isolation units. The three years, 1912, 1915 and 1916, are therefore classed in the series of YEARS WITH RELATIVELY GOOD ISOLATION FACILITIES.

Of the 949 admissions for measles for these three years:

10.5 per cent suffered from serious complications (bronchopneumonia or enterocolitis) as contrasted with 21 per cent in the first series.

* Year ends July 1.

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2.2 per cent suffered from cross-infection as contrasted with 3.2 per cent in the first series, and the

Case fatality was 6 per cent contrasted with 10 per cent in the first series.

Serious Complications and Cross Infections in Relation to Measles' Death Rate

The high mortality of measles treated in hospitals has undoubtedly been due to the greater incidence of broncho-pneumonia, enterocolitis and cross-infections. That these are in reality serious complications can be readily appreciated by attention to the following table which shows the number of all cross-infections and serious complications with case fatality therefrom for five years:

TABLE SHOWING DIFFERENT COMPLICATIONS AND FIRST CROSS INFECTION IN 2,614 CASES OF MEASLES, AND THE CASE FATALITY THEREFROM.

	Occurrence	Deaths	Case Fatality
Cross Infections.			
Chicken Pox	10	0	0
German Measles	3	0	0
Diphtheria	44	23	52%
Whooping Cough	42	6	14%
Scarlet Fever	53	18	34%
Mumps	5	0	0
Totals	157	47	30%
Complications.			
Meningitis	2	2	100%
Gono. Vulvo. Vaginitis	14	0	0
Otitis Media	481	10	2%
Broncho-pneum.	278	141	50%
Gastro Intestinal Diseases	102	22	21%
Sup. Infect. Glands, Neck	26	1	4%
Bronchitis	15	1	7%
Lobar Pneum	6	0	0%
Abscesses	28	0	0
Tonsilitis	12	0	0
Nephritis	18	1	5.5%
Malaria	3	0	0
Ulcer Cornea	7	0	0
Sup. Parotitis	2	0	0
Mastoid Operation	28	0	0
Pleurisy	12	0	0
Impetigo Contagioso	3	0	0
Choleocystitis	1	0	0
Erysipelas	4	0	0
Empyema	1	0	0
Furunculosis	1	0	0
Pulmonary Tuberculosis	2	0	0
Abortion	1	0	0
Marasmus	1	0	0
Iritis	1	0	0
Total	1059	178	16.8

Summarizing the most important points we find that out of 1,059 measles cases with serious complications (otitis media included) 178 died, giving a general case fatality of 16.8 per cent for the com-

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plicated cases. Of the 157 cases of cross-infection 47 died, giving a case fatality of 30 per cent for this class of cases.

The total 157 cross-infections noted in the table show that 6 per cent of the measles cases were thus affected. An analysis of the individual cases with reference to whether the cross-infection was contracted prior or subsequent to admission, is contained in the following summaries:

TABLES OF CROSSED INFECTIONS OCCURRING AT CONTAGIOUS DISEASE HOSPITAL, ELLIS ISLAND, FOR FIVE YEARS ENDING JULY 1, 1916.

1.

Age of patient.	Disease for which admitted.	Secondary infectious disease developed in hospital.	Number of days between admission and second infection.	Were exposed to second infection.		Result.			Death rate per 100 cases.
				Before admission.	After admission	Doubtful.	Recovered.	Died.	
8	Measles	Diphtheria	5	..	..	1	1	..	
4	"	"	0	1	..	..	..	1	
4	"	"	0	1	..	..	1	..	
4	"	"	1	1	..	..	1	..	
4	"	"	6	..	1	..	..	1	
2	"	"	10	..	1	..	..	1	
4	"	"	0	1	..	..	..	1	
3	"	"	3	..	..	1	..	1	
2	"	"	14	..	1	..	..	1	
3	"	"	1	1	..	..	..	1	
1-6/12	"	"	4	..	..	1	..	1	
1-5/12	"	"	1	1	..	..	..	1	
2	"	"	10	..	1	..	..	1	
2-6/12	"	"	0	1	..	..	..	1	
2	"	"	11	..	1	..	..	1	
10/12	"	"	0	1	..	..	..	1	
11/12	"	"	0	1	..	..	..	1	
17	"	"	8	..	1	..	1	..	
3	"	"	1	1	..	..	1	..	
9/12	"	"	60	..	1	..	1	..	
11/12	"	"	22	..	1	..	1	..	
3	"	"	18	..	1	..	1	..	
2	"	"	1	1	..	..	..	1	
1-6/12	"	"	3	..	..	1	..	1	
5	"	"	2	1	..	..	..	1	
1-4/12	"	"	41	..	1	..	..	1	
11/12	"	"	1	1	..	..	1	..	
2	"	"	12	..	1	..	1	..	
11/12	"	"	12	..	1	..	..	1	
3	"	"	6	..	1	..	1	1	
2	"	"	11	..	1	..	1	..	
2	"	"	4	..	..	1	1	..	
3	"	"	0	1	..	..	1	..	
11/12	"	"	4	..	..	1	1	..	
4	"	"	3	..	..	1	1	..	
3	"	"	4	..	..	1	..	1	
3	"	"	0	1	..	..	1	..	
1-6/12	"	"	1	1	..	..	1	..	
1-6/12	"	"	2	1	..	..	1	..	
1	"	"	33	..	1	..	..	1	
4	"	"	2	1	..	..	1	..	
3	"	"	14	..	1	..	1	..	
4	"	"	0	1	..	..	..	1	
3	"	"	0	1	..	..	1	..	
Totals	44			20	16	8	22	23	52%

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II.

Age of patient.	Disease for which admitted.	Secondary infections disease developed in hospital.	Number of days between admission and second infection.	Were exposed to second infection.			Result.		Death rate per 100 cases.
				Before admission.	After admission	Doubtful.	Recovered.	Died.	
10/12	Measles	Scarlet	5	..	..	1	..	1	
2	"	"	5	..	..	1	..	1	
3-6/12	"	"	13	..	1	..	..	1	
3	"	"	23	..	1	..	..	1	
2	"	"	9	..	1	..	..	1	
3	"	"	13	..	1	..	.	1	
11/12	"	"	19	..	1	..	.	1	
3	"	"	21	..	1	..	1	..	
9	"	"	5	..	..	1	1	..	
3	"	"	10	..	1	..	1	..	
1-6/12	"	"	0	1	..	..	1	..	
1-6/12	"	"	60	..	1	..	1	..	
2	"	"	10	..	1	..	1	..	
4-6/12	"	"	0	1	..	..	..	1	
6	"	"	3	..	..	1	1	..	
2-7/12	"	"	1	1	..	..	..	1	
1-4/12	"	"	1	1	..	..	..	1	
2	"	"	1	1	..	..	..	1	
5	"	"	20	..	1	..	1	..	
8	"	"	26	..	1	..	1	..	
5	"	"	22	..	1	..	1	..	
5	"	"	16	..	1	..	1	..	
1-2/12	"	"	7	..	..	1	1	..	
1-8/12	"	"	4	..	..	1	..	1	
5	"	"	12	..	1	..	1	..	
7	"	"	14	..	1	..	1	..	
2	"	"	40	..	1	..	1	..	
1	"	"	9	..	1	..	..	1	
2-6/12	"	"	14	..	1	..	1	..	
2	"	"	2	1	..	..	1	..	
4	"	"	0	1	..	..	1	..	
1-4/12	"	"	0	1	..	..	1	..	
3	"	"	12	..	1	..	1	..	
1-6/12	"	"	0	1	..	..	1	..	
8	"	"	0	1	..	..	1	..	
1-6/12	"	"	0	1	..	..	1	..	
6	"	"	0	1	..	..	1	..	
12	"	"	0	1	..	..	1	..	
3	"	"	7	1	..	..	1	..	
1-1/12	"	"	7	1	..	..	..	1	
3	"	"	4	1	..	..	..	1	
2	"	"	0	1	..	..	1	..	
6	"	"	0	1	..	..	1	..	
2	"	"	6	1	..	..	1	..	
4	"	"	0	1	..	..	..	1	
5	"	"	0	1	..	..	1	..	
5	"	"	0	1	..	..	1	..	
8	"	"	4	1	..	..	1	..	
5	"	"	6	1	..	..	..	1	
3	"	"	9	..	1	..	1	..	
6	"	"	0	1	..	..	1	..	
5	"	"	0	1	..	..	..	1	
3	"	"	0	1	..	..	1	..	
Totals	53			27	20	6	35	18	34%

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III.

Age of patient.	Disease for which admitted.	Secondary infectious disease developed in hospital.	Number of days between admission and second infection.	Were exposed to second infection.			Result.		Death rate per 100 cases.
				Before admission.	After admission	Doubtful.	Recovered.	Died.	
1-6/12	Measles	Whooping Cough	1	1	..	..	1	..	
2	"	"	2	1	..	..	1	..	
3	"	"	1	1	..	..	1	..	
7	"	"	30	..	1	..	1	..	
1-4/12	"	"	0	1	..	..	1	..	
4	"	"	0	1	..	..	1	..	
5	"	"	0	1	..	..	1	..	
2	"	"	49	..	1	..	1	..	
4	"	"	0	1	..	..	1	..	
4	"	"	29	..	1	..	1	..	
2	"	"	62	..	1	..	..	1	
2	"	"	25	..	1	..	..	1	
1	"	"	3	1	..	..	1	..	
3	"	"	2	1	..	..	1	..	
4	"	"	0	1	..	..	1	..	
2	"	"	0	1	..	..	1	..	
1	"	"	0	1	..	..	1	..	
5	"	"	0	1	..	..	1	..	
2	"	"	3	1	..	..	1	..	
4	"	"	0	1	..	..	..	1	
3	"	"	33	..	1	..	..	1	
3	"	"	3	1	..	..	1	..	
2	"	"	23	..	1	..	1	..	
3	"	"	1	1	..	..	1	..	
8	"	"	7	1	..	..	..	1	
4	"	"	21	1	..	..	1	..	
3	"	"	54	..	1	..	1	..	
5	"	"	0	1	..	..	1	..	
2	"	"	8	1	..	..	..	1	
4	"	"	0	1	..	..	1	..	
3	"	"	24	..	1	..	1	..	
4	"	"	6	1	..	..	1	..	
2-6/12	"	"	3	1	..	..	1	..	
6	"	"	5	1	..	..	1	..	
2	"	"	39	..	1	..	1	..	
7	"	"	14	..	..	1	1	..	
3	"	"	0	1	..	..	1	..	
4	"	"	30	..	1	..	1	..	
4	"	"	10	1	..	..	1	..	
3	"	"	26	..	1	..	1	..	
2	"	"	0	1	..	..	1	..	
6	"	"	0	1	..	..	1	..	
Totals	42			29	12	1	36	6	14%

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IV.

Age of patient.	Disease for which admitted.	Secondary infectious disease developed in hospital.	Number of days between admission and second infection.	Were exposed to second infection.			Result.		Death rate per 100 cases.
				Before admission.	After admission	Doubtful.	Recovered.	Died.	
4	Measles	Mumps	19	..	..	1	1	..	
5	"	"	10	1	..	..	1	..	
5	"	"	19	..	..	1	1	..	
5	"	"	10	..	..	1	1	..	
3-6/12	"	"	7	..	..	1	1	..	
Totals	5			1	0	4	5	0	0%

V.

Age of patient.	Disease for which admitted.	Secondary infectious disease developed in hospital.	Number of days between admission and second infection.	Were exposed to second infection.			Result.		Death rate per 100 cases.
				Before admission.	After admission	Doubtful.	Recovered.	Died.	
4	Measles	German Measles	21	..	1	..	1	..	
4	"	"	46	..	1	..	1	..	
3	"	"	12	..	..	1	1	..	
Totals	3			0	2	1	3	0	0%

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VI.

Age of patient.	Disease for which admitted.	Secondary infectious disease developed in hospital.	Number of days between admission and second infection.	Were exposed to second infection.			Result.		Death rate per 100 cases.
				Before admission.	After admission	Doubtful.	Recovered.	Died.	
1	Measles	Chicken Pox	16	..	..	1	1	..	
3	"	"	31	..	1	..	1	..	
3	"	"	10	1	..	..	1	..	
4	"	"	10	1	..	..	1	..	
2	"	"	0	1	..	..	1	..	
1	"	"	3	1	..	..	1	..	
2	"	"	9	1	..	..	1	..	
5	"	"	127	..	1	..	1	..	
1-6/12	"	"	3	1	..	..	1	..	
1	"	"	0	1	..	..	1	..	
Totals	10			7	2	1	10	0	0%

The question of whether the secondary infection occurred before or after the patient was admitted to the hospital was in many instances impossible of exact determination. In order to arrive at a fair opinion, a third doubtful class is added. For the purpose of this classification I have regarded any case developing measles before the ninth day of admission as having contracted his infection before admission and after the eighteenth day as having contracted it in the hospital. Those developing the infection between the ninth and eighteenth days have been considered as doubtful cases. They may or may not have been infected in the hospital. While this is not an absolutely accurate method of determining the truth of the matter it is believed to approximate the truth as nearly as possible. Undoubtedly there are cases where the symptoms of measles have been delayed for more than 18 days after exposure, and possibly there are some authenticated cases where they have been noticed before the ninth day, but the concensus of opinion seems to be that the general average of 14 days is but seldom subject to more pronounced variations than these. I have dated the onset of measles from the appearance of the catarrhal symptoms.

Adopting the same general principles in regard to incubation periods of the other disease, I have diagnosed as diphtheria only those

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cases which were both clinically and bacteriologically such. Diphtheria carriers are not included in this list. Any case thus developing diphtheria before the third day's residence in hospital was regarded as having contracted the disease before admission. From the third to the fifth day it has been regarded as doubtful, whereas after the fifth day it has been considered as a case of infection occurring in the hospital.

Scarlet fever has been diagnosed as such from the first appearance of the rash. All cases occurring before the third day as having contracted the disease before admission. From the third to the eighth day it has been regarded as doubtful, and after the eighth day as cases of hospital infection.

Chickenpox was regarded as having been contracted in the hospital if it occurred before the sixteenth day. The fourteenth to sixteenth day was considered doubtful, while under 14 days it was regarded as occurring before admission.

Mumps was considered doubtful if occurring between the seventeenth and twenty-first days; before the seventeenth day as before admission, and after the twenty-first day as a hospital infection.

Whooping cough was counted as such from the first characteristic whoop and 16 days was assumed to be its incubation period. Any case developing under a 16 days' stay in hospital was considered as having contracted the disease before admission and any after that as a case of hospital infection.

German measles contracted under 10 days was considered as an outside infection; 21 days and after as a hospital infection, and between those times as doubtful.

By the foregoing tables (pages 110 to 114) we see that 84 were exposed to the second disease prior to admission, leaving 73 who contracted the disease either after admission or at a time when the incubation period would place them in the doubtful column. If we consider the whole 73 as having contracted the second infection subsequent to their admission to hospital this will give us a percentage of 2.7 cross-infection to be charged against faulty technique or unavoidable exposure.

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A perusal of reports from the few institutions where aseptic nursing and the barrier or cubicle system is in vogue would lead one to infer that 2.5 per cent or 3 per cent of cross-infections is a sort of irreducible minimum of bad results which represents a maximum of efficient technique.

Experience at Ellis Island does not justify such self-satisfied complacency. In practically every instance, the cross-infection could be traced to some fault of technique on the part of the doctor, ward maid or nurse or to some difficulty inherent in the hospital construction. To remedy the first evils, those incidental to faulty technique, an entire re-construction of our ideas as to the proper financial remuneration of ward maids, nurses and internes is necessary. The aseptic nursing of contagious diseases should be a highly paid profession which could be entered only by those showing natural adaptability after a long and special course of training.

The ward maids should also be looked upon as highly skilled laborers and paid accordingly. The admitting physician should be well trained and well paid, and internes should be compelled to serve a probationary period before going on the ward alone, and they should also receive some compensation besides board and lodging.

A lack of proper appreciation of the foregoing facts constitutes the chief reason for faulty technique in all hospitals handling cases by the new method.

To remedy the evils due to faulty hospital construction will also take much recasting of old ideas. Large wards or even those with 10 or 12 beds should be abolished. Almost without exception convalescent children should be allowed to recover completely in their own little cubicle and the so-called convalescent ward should be relegated to the past. Experience at the Ellis Island Contagious Disease Hospital has shown that convalescent children are more contented alone than with others, *provided they can see the others.* The glass partitions or large glass windows between cubicles, with a fair supply of toys for each child insures more individual and general tranquility than the open ward where all mingle freely. In a hospital constructed along such lines and adequate provisions for service rooms and proper nursing, the conditions surrounding the child with measles will be equally good with those in the best homes. Moreover, in such a hospital, all diseases of children, contagious and non-contagious alike, could be freely and

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safely admitted. The danger from cross-infection and the serious complications would be those inherent in the individual case and no added danger would accrue from hospitalization.

Acquisition of New Knowledge

Although it can be truthfully said that the prevention of measles is entirely possible with the means already at our disposal, it cannot be denied that the problem would be greatly simplified if we were able to safely produce an artificial immunity. Theoretically we knew how to prevent typhoid fever by sanitary measures alone, but practically it was necessary to involve the aid given by vaccination before the problem was in reality solved. Some similar procedure must be invoked before measles is taken out of the column of preventible diseases and placed in the column of disappearing or obsolete diseases.

In an effort to produce artificial immunity, Charles Hermann, of New York City, has reported the successful innoculation of 40 infants under five months of age.*

He obtained the virus from the nasal mucus of otherwise healthy children 24 hours before the appearance of the measles eruption. He did this on the assumption that in children under five months measles is practically always a mild infection. By giving them this mild or modified form of the disease, he claimed to confer an immunity which would protect them against the severer forms. Although his experience apparently justifies his belief it is difficult to reconcile his results with our own experience of measles in infants.

For the five years ending July 1, 1916, out of 2,614 cases of measles treated at the Contagious Disease Hospital at Ellis Island, there were 32 who were under six months of age. Seven of these died, giving a case fatality of 2.18 per cent for this group. Eighteen of the 32 were under five months, five of these died, giving a case fatality of 27.7 per cent for infants under five months of age.

This series of cases alone should be sufficient to warrant a conservative attitude towards the practice of inoculation for the prevention of measles.

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* Immunization against Measles, Charles Hermann, Archives of Pediatrics, July, 1915.

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MEASLES PATIENTS.

FIVE MONTHS OLD AND UNDER TREATED IN CONTAGIOUS DISEASE HOSPITAL FOR 5-YEAR PERIOD ENDING JULY 1, 1916.

Serial No.	Hospital No.	Age	Month	Year
(1)	84	5 months	October	1912
(2)	384	5 "	March	1912
(3)	16	3 "	July	1912
(4)	24	5 "	July	1912
(5)	119	3 "	September	1912
(6)	353	3 "	December	1912
(7)	419	5 "	December	1912
(8)	504	4 "	January	1913
(9)*	605	3 "	March	1913
(10)	624	3 "	March	1913
(11)	903	5 "	May	1913
(12)	963	5 "	May	1913
(13)	1177	4 "	June	1913
(14)*	1206	2 "	June	1913
(15)	302	5 "	October	1913
(16)	437	5 "	November	1913
(17)	492	4 "	November	1913
(18)*	558	4 "	November	1913
(19)	590	5 "	December	1913
(20)*	597	4 "	December	1913
(21)*	610	5 "	January	1914
(22)*	722	3 "	January	1914
(23)*	802	5 "	January	1914
(24)	979	4 "	April	1914
(25)	1018	4 "	April	1914
(26)	1131	5 "	May	1914
(27)	1150	4 "	May	1914
(28)	2	5 "	August	1914
(29)	43	4 "	October	1914
(30)	372	3 "	May	1915
(31)	472	3 "	June	1915
(32)	40	5 "	April	1916

* Died.

Out of 18 patients under 5 months old five died, giving a case fatality rate for this class of patients of 27.7%.

Out of the total of 32 under 6 months of age seven died, giving a case fatality rate of 21.8% for the whole group under six months of age.

It is along the lines indicated by the experimental inoculations of monkeys that further efforts to discover preventive methods seem to hold the most promise. The work of Hektoen and Eggers, Nicoll and Conseil, Lucas and Prizer, and Anderson and Goldberger all goes to show that the virus of measles can be recovered from the blood for a period of about 24 hours before the appearance of the eruption. *Anderson and Goldberger passed the strain of measles virus through six generations of monkeys.

The work of these investigators was by no means completed. They discovered the virus during the stage of leucopoenia and invasion. It remains to be determined at exactly what stage the virus first appears. There is reason to believe that it is actually present long before the period at which Anderson and Goldberger recovered it. †Ruhräh has shown that for five or six days before the appearance of the catarrhal symptoms there is a transient lymphocytosis and a steady daily decline in body weight.

* Anderson & Goldberger, American Journal of Diseases of Children, July, 1912, Vol. 4, pp 20-26.

† John Ruhräh, New York Med. Journal, April 24, 1914.

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Daily studies of the blood, including inoculation experiments should be commenced immediately after known exposure, in the hope that at some stage of the incubation the organism itself might be recovered. This feat once accomplished the way would be open for the production of intelligent vaccine or serum therapy, or the discovery of a safe method of producing an artificial immunity.

Recapitulation

The problem of measles prevention should be approached along the following lines:

1. Standardization of present laws and adoption of same by all state and local health boards.

2. Early detection of cases to be accomplished by co-operation of school and health authorities with the family physician.

3. A complete reform of hospital construction and management of cases in hospital so that hospitalization may be made both popular and efficient.

4. A persistent effort to isolate the organism of the disease in order that an intelligent effort may be made to produce artificial immunity.

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PERTUSSIS

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Whooping cough may be defined as a contagious disease, characterized by paroxysmal coughing attacks. It may occur in epidemic as well as in sporadic form. The contagion is communicated from one human being to another. It is pre-eminently a disease of childhood. The predisposition to the disease is general, and it is observed from earliest childhood until the later years of life. Having once suffered from the disease, the individual is rendered immune to future attack.

Historical

It is doubtful whether Hippocrates recognized whooping cough as a disease entity. Certainly no epidemic cough is described in his writings. Other writers as Celsus, Plinius and Avasenna, the Byzantine, the Roman, and the Arab physicians—knew nothing of whooping cough. Indefinite descriptions of communicable cough are contained in the literature though no clear account of the epidemic occurrence of whooping cough was given until 1578.

The first authentic epidemic was described by Guillaume de Baillou. It occurred in Paris. The epidemic nature of whooping cough cannot be recognized from the descriptions which are contained in the early writings. A severe epidemic of whooping cough occurred in London in 1658. Previous to this time it was endemic in London and occurred only occasionally as a prevalent disease. Since the middle of the 17th century numerous epidemics have been described. Sydenham recorded one in 1670 and another in 1679. In the year 1695 many children died from the disease in Paris and in Rome. In 1726 a dissertation on whooping cough was published by Platz in Holland. In 1730 Friedrich Hoffman contributed a very complete account. Some time after this an epidemic occurred which prevailed not only in Europe but also in South America.

Boerhaave has not described whooping cough in any of his writings. On the other hand de Haen in his lectures describes very accurately the epidemics which occurred in The Hague in 1746 and 1747. There was a severe outbreak in Tübingen in 1749 described by von Sauvages. An epidemic from 1749 to 1764 in Sweden was described by the famous teacher Rosen v. Rosenstein. A severe epidemic occur-

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red in Germany in 1815 and 1816. Since that time other epidemics of less severity have occurred and have been described and recorded.

In the nineteenth century in civilized countries it appears that the epidemics are less widespread and that the disease tends to occur more endemically than was formerly the case. The severe fatal epidemics, for the present at least, seem to have disappeared.

Epidemiology

Whooping-cough occurs in epidemic form. The outbreak may be limited, that is, it may be confined to one house, or it may occur on a certain street, or it may be diffused over a wide territory. Indeed, according to the historical report, the disease has occurred as a pandemic. The disease is particularly contagious for children. Those of the second year are most predisposed. Children of the third and fourth years are also predisposed to the disease, but after the fifth year it tends to become less frequent. During the first year of life the disease is not uncommon, indeed it may be observed in infancy. I have myself observed a case in an infant less than one week old. An older child in the family fell ill with the disease during the last months of the mother's pregnancy. The mother herself acquired the disease, and the infant, as stated, showed symptoms during the first days of life. Any one who has not seen a case of whooping cough in a newly born infant can scarcely imagine the symptoms which it produces. The baby gives a few expulsive coughs, becomes intensely cyanotic, seems to wilt, and appears lifeless. This baby after a very severe illness recovered. These cases are occasionally recounted in the literature.

Cockayne contributes a paper on the subject of pertussis of the newly born (British Journal of Children's Diseases, Vol. 10.) He concludes that the symptoms which appear in the infant during the first days of life depends on an infection from the mother, and he assumes without offering proof that the bacillus must be present in the blood. It must be remembered in connection with these cases that the correct diagnosis may be overlooked in view of the fact that the baby does not whoop, and that the paroxysm is atypical. There is usually some bronchitis present however, and the condition resembles in many respects attacks of pulmonary atelectasis in young infants.

Paul Luttinger (American Journal, Diseases of Children, Sept., 1916) summarizes the age incidence of the disease, based upon an

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analysis of ten thousand cases, as follows: About 80 per cent of all cases and 97 per cent of all deaths are in children under five years of age; 50 per cent are in those under two years of age, and over 50 per cent of all deaths are in children under one year of age.

Older children and adults show considerable immunity to the disease. According to many observers, girls are more frequently attacked than boys. In order to explain this belief it has been suggested that the larynx of the female child is congentially narrower than that of the male and for this reason more easily and more severely attacked. It follows, then, that the prognosis should be less favorable in girls than in boys for the same reason. Luttinger in his recent publication says that no matter what group of figures are examined one is struck with the high morbidity and mortality incidence among girls.

While adults are rarely attacked, women are more susceptible than men. This is particularly true of pregnant women. As a general rule the attacks are less typical and of less severity in adults than children. The disease does occasionally occur in very old people. Apparently certain families show a more marked predisposition than others.

It is frequently stated that the disease occurs most frequently toward the end of winter and in the early spring. I believe, however, that at the present writing no general rule, can be given for the seasonal occurrence of the disease. There is no doubt that the period of prevalence varies in different localities. Paul Luttinger's findings on seasonal occurrence are very interesting in this connection. He found that of 6,868 cases reported during 1915 the disease became more frequent in May, the number increasing in June and July, reaching the highest point in August, diminishing slightly during the autumn and falling in December. He is convinced that most cases occur during the spring and summer.

One would expect a priori that the disease be less severe in the summer when the patient can practically live out doors, though Luttinger's figures show that the death rate is high in July, August and September. It is said that the disease runs a milder course in warm than in cold climates. It is less frequent in some years than in others. There are times in every large center when there are only a few cases. This may be due to the fact that large numbers of children may be immunized one season by being infected with the disease, and that for

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one or two seasons thereafter there are relatively few who are susceptible.

So far as the communicability is concerned, it is the concensus of opinion that the malady is passed from one individual to another by the micro-organisms contained in small particles of sputum, expelled during the act of coughing. These particles become lodged in the respiratory tract of another child, and cause another infection.

The indirect method of infection through dried sputum, dust, clothing or toys seems to be of rare occurrence.

The 6,868 pertussis cases reported during the year 1915 were distributed as follows:

Month	Cases Reported	New Cases At Clinic	Deaths
January	341	140	14
February	381	65	16
March	452	91	16
April	462	112	42
May	754	114	43
June	599	231	34
July	843	253	40
August	906	348	51
September	640	295	55
October	543	181	39
November	458	173	15
December	389	157	20
Totals	6,868	2,160	385

Etiology

It must be acknowledged that there is not yet universal agreement concerning the etiology. No one can doubt that the disease is infectious and that the upper respiratory tract is the focus of localization. Everyone who has any acquaintance whatever with the disease knows that it may be conveyed from one person to another, that it occurs in epidemic form, and that it may appear in places where it never existed before. As a rule a new invasion of this kind may be traced to some imported case.

It may be stated as a general proposition that the disease is conveyed by human carriers. Adults who suffer from atypical attacks of the disease are carriers and undoubtedly contribute to its spread. Whooping-cough is considered to be very contagious. On the other hand every physician of experience will confirm the observation that some individuals who are exposed and who have not previously had the disease nevertheless remain immune.

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Luttinger finds that moving picture shows are centers for the spread of infection, and that public conveyances, schools, nurseries, and recreation places, are likewise a menace. He found in his clinical studies that whooping cough is transmitted by direct contact in about 60 per cent of the cases, the infection usually being carried by a neighbor.

A factor in the widespread infection of the disease is the persistence of the coughing process. For this reason the infectiousness continues for a long time. The frequency of coughing probably bears some relation to the spread of the disease. The oftener the patient coughs, the more infectious material is expelled, and consequently more chances are present for infecting others.

How long does whooping cough in children remain infectious? How long may a child ill with the disease remain a carrier? Clinical observations lead to the conclusion that the disease is most readily conveyed during the catarrhal stage, and in the beginning of the paroxysmal period, and that from this time on the infectiousness of a given case diminishes, though we have no evidence to disprove the possibility that the disease may be communicated to others as long as the patient coughs. Health boards and sanitarians have decided that a child may be readmitted to school forty-two days after the paroxysmal attack has ceased or about three weeks after the cough has disappeared.

There are those who seriously believe that the nervous constitution of the child is a predisposing factor in causing the disease. The thought however, that the disease is a pure neurosis is untenable and requires no further elucidation. It is interesting as well as important to state both sides of a case and it must be acknowledged that there are still those high in authority who are not absolutely ready to accept the Bordet-Gengou bacillus as the proved and specific cause. Czerny is not keen to accept a single micro-organism as the specific pathogenic agent. He thinks that any one of several micro-organisms may produce paroxysmal attacks indistinguishable from, or identical with pertussis, provided that an increased nervous irritability pre-exists on the part of the child. He does not deny the specificity of the Bordet-Gengou bacillus, though he thinks additional evidence must be adduced to prove it the sole etiological factor. He would consider the etiology of pertussis in the same light as that of pneumonia; it might

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be caused by a variety of micro-organisms. This is tantamount to saying that if the neuropathic constitution of the child is eliminated and if the same infection takes place, a respiratory catarrh will result but not a whooping cough.

Jochmann also thinks that a nervous factor may play a part in whooping cough. The opinion of Jochmann may be quoted in this connection. He is not convinced that the Bordet-Gengou bacillus is the specific organism, he does not consider that animal-innoculation experiments are conclusive, and he is unwilling to be convinced by the agglutination and complement-fixation tests. He says that one should be cautious in accepting serological evidence, exclusively, in identifying a micro-organism, and thinks that agglutination and complement-fixation tests indicate that a reciprocal action exists between the bacillus and the host without yielding any positive knowledge as to the specific cause of the disease. He reminds us that the streptococci found in scarlet fever can be agglutinated by the serum of scarlet fever patients. Further, he concedes that streptococci produce secondary infections in scarlet fever, though he insists that few, if any, bacteriologists would maintain that streptococci are the specific cause of scarlet fever. Jochmann concludes that the Bordet-Gengou bacillus is not in entire conformity with the postulates of Koch.

Bordet and Gengou in 1906 isolated on potato glycerine and blood-agar a short bacillus which previously had not been recognized. This organism is obtained from the sputum of whooping cough patients during the catarrhal period, or during the first week of the spasmodic stage. Later on in the disease it is difficult or impossible to obtain the organism and this is thought to be due to the fact that other saprophitic germs, particularly the influenza bacilli, overgrow the Bordet-Gengou bacillus. This bacillus is a small rod with round ends stains well with the ordinary analine dyes, though the best results are obtained with carbol-methyl blue, or with carbol-toluidin blue. The periphery and the ends seem to stain more sharply taking on the characteristic of polar staining. The organism is immotile, aerobic, and stains negatively with the gram stain. When the culture material is inoculated colonies are scarcely visible, though after several generations a whitish coating is noted on the culture material.

Symptomology

The following stages of the disease are described. First, the period of incubation. This stage lasts from three to eight days and is

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without symptoms. Second, the catarrhal stage. This is characterized by symptoms which resemble those of a severe cold. The patient suffers from rhinitis, sneezing, headache, conjunctivitis, and excessive secretion from the eyes. Cough occurs during this stage, though it has none of the characteristics of pertussis. Fever is very common during this period, and may be mild, remittent, or intermittent. The catarrhal stage usually lasts from three to fourteen days, though in cases of severe epidemics this stage may be shorter. The general condition of the patient is but slightly disturbed as a rule. The appetite is good, the digestion usually normal. In the severer cases, however the patients complain of fatigue, headache, and loss of appetite. The cough continues about the same throughout the entire stage, and does not differ from that of ordinary bronchial catarrh. If the disease is of the severer type fever sets in with the catarrhal stage. Catarrhal symptoms are more severe. The patient complains of photophobia and difficulty in swallowing. In the severer type of the disease he early complains of an irritative cough due to laryngitis and tracheitis. Other symptoms such as headache, languor, loss of appetite, and frequent sneezing become more marked. As this period draws to a close the cough begins to take on a more paroxysmal character. Children become quieter, they avoid active movement because they very soon learn that activity produces more frequent and more severe coughing spells.

The characteristic period of whooping cough is the paroxysmal stage. As one would expect, a sharp line of demarcation between the catarrhal and the paroxysmal stage, cannot always be drawn. At the height of the disease in a typical case the cough is so characteristic that it cannot be mistaken. Fever as a rule is not present. Between the attacks the children appear to be perfectly well. In mild cases this stage lasts from four to six weeks, in severe cases from two to three months or even six months. A single attack may be described as follows:

The patient feels perfectly well, he is playing quietly and is unconcerned; suddenly he ceases to play, his face becomes pale, he holds his breath, very frequently, he attempts to cry. Adults in the same condition complain of a tickling in the throat and of the pharynx and larynx and sometimes experience a feeling of pressure or heaviness over the thorax. Sometimes they complain of dizziness. Very

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often they experience a sense of choking accompanied by a feeling of anxiety. The premonitory symptoms last only a few minutes. The paroxysm begins with a sharp, loud inspiratory sound, which may be singing or whistling in character. This is followed by a number of expiratory coughs, possibly five or ten. These may repeat themselves several times to be followed by more or less respiratory difficulty and the expectoration of tenacious white mucous. Very often vomiting of food and mucus occurs. Frequently the patients are cyanotic during these attacks, the face and neck being particularly blue. The veins of the neck become prominent, the larynx is raised, the muscles of the neck are contracted, the muscles of the upper part of the body and of the extremities may show spasmodic movements. Urine and feces are sometimes passed involuntarily. Blood may appear from the mouth and nose, older children usually run to a chair, or to mother or nurse to seek support.

After the attack is over the children usually lie down prostrated. Frequently they perspire profusely; though in a brief time their misery is forgotten and they resume their play as though nothing had happened.

An attack may be produced by irritating the pharynx with a tongue depressor, or the larynx may be irritated in swallowing food. Attacks are more common during the night and early morning. Patients are frequently awakened from their sleep by the cough. Older children often refuse to go to bed because they have found that the cough is increased while they are in a recumbent position or during sleep. Very often the paroxysm is ushered in by repeated sneezing, which some authorities refer to as spasmodic sneezing.

If the disease lasts a considerable time the patient becomes emaciated. This is due to the loss of sleep, the repeated vomiting attacks and the resulting inanition.

As the paroxysmal stage draws to an end the attacks naturally become less severe and less frequent. Patients begin to gain in weight and little by little recovery occurs. The reports during the last two decades indicate that the disease lasts from six to ten weeks. The older writers recorded epidemics which were more sharply acute and in which the disease ran a short and severe course, and not infrequently terminated fatally.

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It is interesting to note that the disease varies in course and intensity in different children in the same family. One child may have a most severe attack, while a brother or sister may have the disease in such a mild form that its nature would not be indicated save for the familiar situation. It is certain that abortive cases occur. It is an old and well recognized fact that the peculiar characteristics of the disease are lost when complications occur. This is notably true in cases in which pneumonia and diphtheria occur as complications. The attacks are more frequent when the patient eats or drinks rapidly. Paroxysms are also produced if the patient over-distends his stomach. Rapid bodily movements, laughing, crying, sneezing, irritation of the skin, tickling the mucous membrane of the pharynx and emotional excitement of any kind increase the tendency to cough.

It cannot be denied that at times a degree of imitation tends to produce cough. It is frequently observed in hospitals where a number of children are sick with the disease that if one of these commences to cough all of the rest join the chorus. A change of climate sometimes diminishes the cough, and an improvement in weather conditions sometimes ameliorates the frequency and severity of the paroxysms.

In rare instances the urine has contained sugar and an increase of uric acid. A moderate albuminuria may be present, which disappears with recovery. Hematuria may occur though it must be looked upon as a hemorrhagic condition similar to that which is produced in other parts of the body due undoubtedly to the rupture of small vessels, brought about by the severity of the cough. An acute nephritis may develop after whooping cough, though it must be considered rare.

Complications

Complications require only brief mention. The most frequent of these are diffuse bronchitis and catarrhal processes in the mucous membrane of the trachea and larynx. Many children die from the extension of the bronchitis to the minute bronchi. The most feared complication is pneumonia. As has already been said, when the pneumonia becomes well developed the typical characteristics of the whooping cough disappear to reappear when the pneumonia has resolved. It may be mentioned in passing that whooping cough pneumonia is particularly fatal in children who are at the same time suffering from rickets. Bronchiectasis and pulmonary fibrosis result from peribron-

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chial tissue changes. Emphysema may be a temporary condition and disappear as recovery from the disease takes place, or it may remain as a permanent condition. When severe paroxysms occur interlobular or sub-pleural emphysema may occur. Emphysema of the skin has been reported, and has been known to involve the entire body. Pneumothorax has been occasionally described. Hemoptysis is one of the rare complications.

The relation of whooping cough to tuberculosis need not be referred to at length. Pulmonary tuberculosis is not an infrequent sequel; tuberculous adenitis, particularly of the bronchial glands, is a common complication; and acute miliary tuberculosis sometimes terminates prematurely the course of the whooping cough.

The nervous system presents numerous complications. Convulsions in this disease have attracted the attention of physicians for a long time. These may be due to simple hyperemia, or edema of the brain. Brain hemorrhages are not infrequently observed. As a result hemiplegia, aphasia, hemianopsia, and convulsions may occur.

Encephalitis with convulsions and fever is not infrequent, and hemorrhage into the spinal cord, with ascending paralysis of the Landry type receives frequent mention in the literature. Psychic disturbances, such as complete dementia have been observed.

The heart frequently shows an arythmia. On microscopic examination the heart muscles show fatty degeneration. Pericarditis is frequently associated with pleurisy and pleuro-pneumonia. As has already been noted, true nephritis may undoubtedly occur. Otitis media occurs in some cases, and hemorrhage into the internal ear has in rare cases produced permanent deafness. Hemorrhages into the skin or into the mucous membranes are frequently recorded. Hemorrhages into the sclerotic coat are observed by all clinicians, and orbital hemorrhage with marked exopthalmus is recorded.

Dilatation of the right side of the heart may be due to bronchopneumonia, but in some instances the mechanical effects of the violent whooping cough may be responsible. Ulceration of the frenulum of the tongue occurs in nearly fifty per cent of the cases. Bouchut called attention to the symptom fifty years ago. The ulceration usually appears during the second or third week after the appearance of the whoop.

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Optic neuritis may occur. Strumpel reports such a case which recovered. He thought it was due to cerebellar ataxia following pertussis.

Diagnosis

It would be desirable to recognize the disease in its earliest stages, that is, during the catarrhal period. If this were possible we would have advanced a long step towards the prevention of the disease. The patient during the catarrhal stage is probably more infectious than at any other period. He infects other children on the playground and at school, as well as in the home. When the paroxysmal stage has occurred with its typical whoop the merest tyro can recognize the disease. During the catarrhal stage the Bordet-Gengou bacilli are present in greatest profusion, though even at this period the isolation of these organisms is beset with difficulties, and their differentiation from influenza bacilli is by no means easy. The blood examination during the early stage sometimes assists in the diagnosis. According to Churchill lymphocytosis is found during the catarrhal stage in 90 per cent of the cases. H. Asby (Brit. Med. Jour., London, 1910) states that if the lymphocytes form 50 to 60 per cent of the total number of white cells, and if there is a greater number of the large lymphocytes than normal, a presumptive diagnosis of whooping cough may be made.

Baroch describes the blood cycle as follows: At the very onset of the disease a leucocytosis, with an increase in every variety; then a small cell lymphocytosis. The large lymphocytes follow the course of the small, but do not reach their greatest number until the small cells have become stationary or are diminishing in number. At the acme or defervescence of the disease lymphocytosis as well as leucocytosis diminishes and polymorphonuclear leucocytes begin to increase.

Netter and Weil point out that the complement-fixation method is not adapted to early diagnosis, because the specific antibodies do not appear before the second week of the convulsive stage.

Olga Hovitzky (Selected Studies from the Bureau of Laboratories, New York, 1914-1915) finds that agglutination tests in clinical diagnosis of pertussis, compare favorably with the complement-fixation tests, only in the first week of the whoop. In the latter stages of the disease complement-fixation antibodies appear more frequently than agglutinins.

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Miriam Olmstead and Paul Luttinger (Arch. Int. Med. July, 1915) come to the following conclusions: Complement-fixation tests on serum from 111 cases of pertussis, or suspected pertussis, support the theory that the Bordet-Gengou bacillus is the etiological factor in the disease. The complement-fixation tests may be of value in the diagnosis of doubtful cases of pertussis.

Friedlander and Wagner (Diagnosis of Whooping Cough by Complement Deviation Test, Am. Jour. Dis. Child., 1914, Vol. 8, p. 134) found this diagnostic method of value in all stages of the disease, early as well as late. They found in 18 cases of positive whooping cough, that the test gave 18 positive results and no negative. In 12 catarrhal cases they found 11 positive results.

There are a number of other clinical facts which assist in the diagnosis of whooping cough during the paroxysmal stage. The frequent occurrence of petechia and ecchymoses over the entire body, particularly on face, neck, and in the conjunctiva. One very often observes a slight edema of the face, the dark blue color of the eyelids. We have already mentioned ulcer of the frenulum. Pressure over the larynx, or the introduction of a tongue depressor tends to bring on an attack.

Paroxysms of whooping cough must be differentiated from the cough produced by enlarged bronchial glands. The cough that is due to the latter cause is not followed by a typical whoop. Indeed Schick has pointed out that in whooping cough the crowing is inspiratory, whereas in enlargement of the bronchial glands, the crowing is expiratory. In bronchial gland enlargement vomiting after the coughing attack does not occur, as a rule.

Prognosis

Most children recover from whooping cough. It is only rare that a child dies during a paroxysm from heart weakness. Sometimes death occurs from emaciation and underfeeding on account of persistent vomiting. When death takes place it is usually the result of complications.

John Lovett Morse (presidential address before the American Pediatric Society, 1913) makes a plea for more efficient public regulations relative to the control of whooping cough. He took great pains to gather statistics by writing to all state boards of health seeking to obtain the number of deaths from whooping cough, scarlet fever, and

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diphtheria during 1911, and also from bronchitis and broncho-pneumonia in children under five years of age.

He reports that in thirty states 6,251 died of whooping cough, 4,232 from scarlet fever, and 9,579 from diphtheria. These are the reports from thirty states during the year 1911 . His figures show that whooping cough is almost everywhere more fatal than scarlet fever, and less fatal than diphtheria.

Whooping cough is especially serious in southern states. Morse found that in North Carolina 736 children died of whooping cough in 1911, against a total of 447 from scarlet fever, measles and diphtheria combined.

Paul Luttinger finds that the actual case mortality in whooping cough is difficult to estimate owing to incomplete returns. It is probably about one per cent. The death rate per 100,000 population is about seven. It has been steadily decreasing for the last fifty years, having been as high as 58.2 in 1872 and as low as 4.71 in 1908.

That tuberculosis is a frequent sequel of the disease has already been stated. It may be mentioned in this connection that whooping cough may not only produce death, but that it also may materially affect the future health of the child. The various nervous complications may result in permanent paralysis or idiocy, and the pulmonary changes may give rise to bronchiectasis, emphysema and pulmonary fibrosis.

Treatment

Prophylaxis. The most appropriate subject for consideration before the American Society for Study and Prevention of Infant Mortality is the prevention of disease and death. While the study of disease presents topics of all-absorbing interest, the end result of all medical research should tend toward the practical alleviation of suffering, the prolongation of life, and the cure and prevention of disease.

The prevention of whooping cough presents many difficulties. In most instances the disease is not recognized during the catarrhal stage which is undoubtedly more infectious than any other period of the disease. There are many atypical cases, both in children and in adults. Such individuals are carriers and may disseminate the disease far and wide. There are undoubtedly abortive cases, in which the disease fails of recognition and through which it is disseminated.

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Consequently if we view the problem of prevention frankly and calmly we are compelled to admit that the hope of eradication depends upon early diagnosis, more conclusive knowledge as to the specific causative factor, and the perfection of a prophylactic serum as well as a specific medication.

Czerny in a recent number of the Tahrbuch für Kinderheilkunde (1915) contributes a defense of his ideas on whooping cough and makes some very interesting statements concerning the contagiousness of the affection. Those who have visited his clinic which was formerly at Strassburg remember that he admitted children suffering from whooping cough to his general wards. According to Czerny, the disease did not become epidemic in hospital or ward. He explains this as follows: The whooping cough patient is kept at a distance of 1½ meters (about five feet) from his neighbor. Czerny has convinced himself that by the severest coughing the patient does not spray the expectoration five feet. In addition, Czerny points out, the patient should not be allowed to rise from his bed, wander about the ward, and possibly cough directly into the face of an unaffected patient. On the other hand, convalescent patients should not be allowed to approach closely the whooping cough patients in bed. In order to carry out such a regime dependable nurses are necessary. He points out, further, that the nurse is not required to change her gown as she passes from patient to patient, nor is she required to disinfect her hands. He recognizes that chickenpox and measles may be carried by the nurse, though there are differences in the way in which the various infectious diseases are carried. He insists that a nurse who herself is coughing or is ill with the disease may be a carrier though her clothes and her hands do not carry the infection.

The possibility always exists that a patient may enter the hospital during the catarrhal stage when the disease is most infectious and in this way it may spread throughout the ward or the hospital before the true nature of the condition is recognized. This does not occur in Czerny's wards because the child with even the slightest cough is admitted under suspicion and is treated as above described. Czerny admits having had infections of measles, chickenpox and scarlet fever in his ward though a house epidemic of whooping-cough has never occurred. He finally admits that it is more difficult to prevent infections of whooping-cough among infants than among older children, and

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that the naso-pharynx in infants is particularly susceptible to infection.

The difficulties in the prevention of whooping-cough may be considered under the following heads:

1. The disease is infectious during the early stages.

2. The disease presents so few symptoms at the onset that the diagnosis can be positively made only after a lapse of considerable time when definite symptoms occur.

3. On account of the mildness or atypical symptoms the true nature of the disease sometimes remains unrecognized during the entire course.

4. In spite of an evident diagnosis the children are sometimes sent to school.

5. Convalescents are sometimes admitted to their classes before the contagiousness of the disease has disappeared.

There are many difficult problems in the prevention of the disease. All are agreed that whooping-cough is an affection which is most favorably treated by living out of doors. If we attempt to isolate these patients, particularly in the homes of the poor, we are defeating the most important element in the treatment of the individual child. Isolation hospitals, as they are constructed and conducted are not adapted at the present time to the proper treatment of whooping-cough. Disinfection in hospital or home is of doubtful value, because bacteriologists tell us that the Bordet-Gengou bacillus is scarcely viable away from its host. Morse has pointed out that the regulation of school attendance by quarantine and isolation and notification of health boards is indifferently provided for, if at all, and improperly administered at the best. This applies not only to American communities, but also to English and Scotch institutions where neither quarantine nor disinfection are insisted upon. Conditions are not much different in Austria, Germany and France.

Another matter which increases the difficulty of preventing the spread of whooping-cough is the fact that the cough is frequently untreated or receives the favorite cough remedy from the mother or druggist, the nature of the cough is not recognized, and possibly the physician is called in late, if at all. In the meantime, the infected child has been attending school, participating in the recreation of the playgrounds, and carrying the disease in many directions.

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The most important deduction that can be made from the accumulated evidence is that children who are suffering from whooping cough should be kept from school until the nature of the cough is manifest, and in the same way infected children should be prevented from coming into contact with those who are well. There can be no doubt that much can be accomplished if the general public is better informed as to the dangers of the disease, its contagiousness, the importance of its early recognition and the necessity of isolation and quarantine. Physicians, teachers, parents and nurses should take pains to learn more concerning the introductory stages of the disease, and the methods employed in its prevention.

Paul Luttinger would reduce the morbidity and mortality of this disease by:

1. Securing the co-operation of physicians in reporting all cases of pertussis and in using the specific vaccines as early as possible as a prophylactic measure.

2. Quarantine of pertussis cases during the first two weeks of the disease.

3. The use of suitably constructed hospitals where cases of pertussis could be properly treated and studied.

Frederic S. Crum (American Journal of Public Health, Vol. V, No. 10) closes an excellent statistical study of whooping cough by saying: "The statistics of this disease teach that whooping cough requires much more careful study than it has ever yet received; that it is still surrounded by a hazy nimbus composed partly of ignorance, and partly of half-knowledge; that it is a disease, the mortality from which entitles it to more serious attention than it usually receives at the hands of physicians and parents."

Vaccine Treatment. The value of vaccine in the treatment of whooping cough is still under consideration. The reports are conflicting. Some are sanguine. Alfred Hess (Jour. A. M. A., Sept. 19, 1914) found no curative results from the use of the vaccine during the disease, notwithstanding the fact that he used an autogenous strain in one series of cases. According to his statistics the prophylactic treatment cannot be regarded in any sense specific. Of 244 cases that were vaccinated, 20 came down with the disease.

Matthias Nichol and Paul Luttinger treated whooping cough with stock vaccine and came to the conclusion that the average duration of

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the treated cases was 25 days, and that cases which received both commercial and stock vaccines, eight in number, lasted 40 days.

Paul Luttinger, in his latest communication, says that when the proper vaccines are used there has been a shortening of the paroxysmal stage, and a reduction in the severity and number of the paroxysms.

Out of 2,103 patients with pertussis, 75 per cent of whom were treated with vaccines. 15 deaths occurred. Ten of this number were treated with medicine and one with injection of the vaccine. The other four were treated with vaccines exclusively, two of them being commercial vaccines, and two others the stock vaccine prepared by Luttinger himself. No death occurred in any patient who presented himself before the third week and received vaccine treatment regularly.

As a prophylactic, Luttinger thinks that the vaccine is efficient if used sufficiently early and that it is capable of aborting the disease if no time be lost in its use.

The possibility of immunizing by vaccination is still an open question for pertussis. Those who received prophylactic injections, as well as those who did not, remained free in about equal numbers from the disease.

The Hygienic Treatment. It has already been said that fresh air treatment, good hygiene, efficient nursing are the most important factors in the treatment of the disease. So far as drug therapy is concerned, there undoubtedly are medicines which relieve the paroxysms and insure rest and quiet for the patient. These are found among the anti-spasmodic and sedative drugs.

There is scarcely a disease where so many drugs have been employed and later on abandoned for some more popular remedy. The list of drugs is a very long one. It is to be hoped that a specific remedy will be secured which will prevent and cure the disease if used sufficiently early. One will suffice.

DISCUSSION

The Chairman: The length of the papers at this meeting was purposely limited so that we might have some discussion. Dr. Frank C. Neff, of Kansas City, Mo., has kindly consented to open the discussion.

Dr. Frank C. Neff, Kansas City Mo.: I take it the object of the discussion of these two diseases is essentially a consideration of their prevention. Society is not concerned at present with their cure. It seems as if the preven-

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tion of two such widespread diseases were a problem almost insoluble, but we are concerned I think with two phases in particular. One is that which deals with notification and efficient quarantine—and the other with the education of the public.

The great drawback and failure of notification has been that it has been nobody's business to notify except the physician's. Probably three-fourths of these cases never call a physician. Then it is no one else's business to notify the Board of Health and see that quarantine is effected. It seems that a practical solution might be found if we had regular inspectors from Boards of Health who would, at least during the period of an epidemic, visit the various districts of a city and ascertain where these contagions existed within the district. I do not suppose the employment of the ordinary political employe would be of much service, but the extension of the very efficient district nursing work to this particular line, I think, would help greatly in ascertaining the presence of infections in neighborhoods that are ordinarily concealed from the public. You can depend on it if someone next door has a contagious disease and you have a child in your house and the way is made easy, you are going to be willing to notify the authorities. The way would be made easy by the visit of the nurse to your house and her enquiries as to the presence of disease.

The chief difficulty in the management of these diseases as they occur in the home is first in the failure of the family and the individuals in the household to recognize the diseases in their early period, and second in the indifference on the part of the family as to the seriousness of the disease and of the consequences of its dissemination. This brings me to the other phase of the question of prevention, and that is education.

Within the last year a father deliberately brought his child with a well-advanced case of whooping cough, into my office, not for the purpose of consulting me about the whooping cough but for some other ailment, and it had never occurred to him, or he did not care, that he was exposing the children on the street-car and other children in the office, to this disease. This father was a physician! He should have known better, but if we can expect such a thing as that from a man of his education, what else can we expect from the average family?

There seems to be a foolish desire on the part of many families to avoid notification or placarding. I do not know why it is a disgrace to have a placard but it seems to be looked on as such. Then there are many cases where no physician is called in, no diagnosis is made, and no attempt at quarantine is thought of. The Boards of Health it seems to me have very feeble control of these two diseases. A suggestion has been made for some rules to cover the whole of the United States, and this is a very important suggestion. We all know interstate travelling frequently spreads the diseases. Children are taken on trains, and expose other children to the contagion. I think this society could do no better work than to have a permanent committee at work on the education of the public regarding the dangers of these diseases.

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Dr. H. T. Price, Pittsburgh: I shall take only a very few minutes in discussing these papers. I cannot add much, but I will emphasize some things. The first is the high mortality. We have seen that the high mortality of these diseases is in the first two years. A point to consider is that the children under two years are usually not associated with other children. The disease is usually brought to them. So one point is to keep it away from them. These diseases are epidemic or endemic; they become epidemic when we get enough material for the disease to spread. We see the reduction of scarlet fever where school inspection is carried out, because the disease is recognized and therefore is not carried to the babies at home. Typhoid is another disease that formerly was considered a necessary evil, but now any community that has typhoid fever in epidemic form is investigated thoroughly and the disease promptly put under control.

We are afraid of smallpox because it is such a loathsome disease. The great trouble with infantile paralysis this last year was not so much the illness as the results. People would rather have a child die than live paralyzed. If we consider these points in relation to whooping cough and measles we realize that it is the fact that the children so commonly have them and get well that has made people so careless. There is the difficulty of diagnosis too in the stage that we believe to be the most contagious. I know of one case where children were taken out of the city to avoid exposure. A child, however, was taken out to play with them, and in the proper time six of these isolated children were taken ill with whooping cough. The control of this disease is not really with the Health Department, because the people will not report the cases. People look on these diseases as necessary evils and do not call in the doctor unless the children are seriously ill. One reason is that ordinarily the disease is very mild in older children. The period of quarantine is so long, too, and the child has to be kept out of school for so much longer time than parents think necessary, that that also deters them from reporting it.

One of the points then to consider as to the babies is that of quarantining the babies from the disease but not for the disease—quarantine them from the children who have the disease, and then they will not have it.

The Chairman: I should like to hear what Dr. Shaw has to say about this.

Dr. H. L. K. Shaw, Albany: Dr. Nicoll, of the New York State Department of Health, who expected to discuss these papers, was unable to be present. I am glad of the opportunity to speak of the work of one of our sanitary supervisors of New York State in controlling an outbreak of measles in his district. Dr. John A. Smith worked out a very practical plan and his article in regard thereto will appear in the October number of the monthly bulletin of the New York State Department of Health. The method followed, briefly, was: in the first place the health officer notifies the teacher of a school of the number of cases of measles. The teacher has previously been instructed as to the early symptoms which she should recognize. During the epidemic the

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teacher takes the temperature of pupils and sends back home every child having a temperature of 99½°. In measles the temperature usually precedes the first visible symptoms by a period of perhaps 24 hours.

The health officer is notified of such cases as are excluded from school and he makes a daily visit to these homes and sees not only the sick patient but also the non-immune members of the family during the incubation period of the disease.

A system of cards was devised to keep track of the work. One of these cards was sent to the parents, another to the family physician, and a daily record was kept of the pupils returned to the school.

An ingenious method used in carrying on the work was the employment of a junior health officer. The teacher appoints a boy or a girl each week to fill this post. This junior health officer has a report blank and is required to go to the homes of any children who are absent from school and find out the reason therefor. No child is allowed to return to the school after having had the measles until a certificate signed by the health officer is presented.

Just a word regarding the contagious period of whooping cough. Dr. Abt did not mention Comby, of Paris, who has long held the same views as has Czerny and Finkelstein regarding the non-contagious nature of whooping cough after the paroxysmal stage. Since my attention was called to an article by Comby in 1910, I have had the courage to admit whooping cough cases, after the paroxysmal stage has well advanced, into the children's wards of the hospital, much to the horror of the superintendent, and we have not had a secondary case develop.

The neurotic element in whooping cough is an important one, for every physician has had cases with nervous children in which the paroxysmal cough continues for a long time, and which returns every time they have a slight cough. Dr. Holt has described a number of cases with paroxysms identical to those of whooping cough which were due to the bacillus of influenza.

The Public Health Council of the State of New York formulated a Sanitary Code two years ago and relegated the placarding of a house in case of contagious disease to the past, and required the health officer simply to placard the room. In New York State, therefore, the parents, the wage-earners, or in fact anyone in the house, are permitted to go in and out freely so long as the health officer is assured and convinced that these parties do not enter the sick-room itself. This takes away the odium of having one's house placarded.

A Speaker: Is it the same with diphtheria and scarlet fever?

Dr. Shaw: Yes, sir.

A Speaker: I would emphasize one or two points. For several years I have advocated that parents and teachers learn to use the clinical thermometer, and that every child who comes to school who apparently has fever be sent home. If any child coughs in school that child should be sent home, and by explaining to the parents the reason for this, and showing that by neglect-

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ing the matter the child is a menace to the other children in the school, you would prevent the spread of contagion. As Dr. Price said the contagion is almost always brought to the smaller children from some other child. It is difficult to protect the child at school because other people are so careless about sending children there. If it could be made a rule in a school that when a child has fever or a cough it should be sent home it would help a lot. Even if a child had nothing but a common cold it would be a good idea, because that is a menace; we know how an epidemic of cold will spread through a school room.

A Speaker: Ten years ago, I made the statement to a body of physicians that if our quarantine laws could be carried out effectually for six weeks or two months, we might blot out every one of our contagious diseases, provided every case was reported. We do not expect to arrive at this Utopia. These diseases are with us always, but it is necessary that we should get some plan whereby we can stop these epidemics of measles and whooping cough, and it seems to me it is time to appoint a committee to present a program to different legislative bodies to stop the ball rolling and finally get into the best position possible regarding these diseases. Dr. Morse, in the paper Dr. Abt referred to, suggested that in cases of whooping cought patients should be placarded so that everybody coming near could know the conditions. It takes us back to the times when the lepers were placed outside the city walls, and anybody who approached them, as they cried "Unclean, unclean," was under penalty of death. If we could induce parents to keep the children away, or have a law that they must be kept away and placarded, it would help.

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PROPAGANDA

Thursday, October 19, 1916, 2.30 p. m.

COMMITTEE

Chairman

MR. GEORGE R. BEDINGER, General Secretary, Children's Aid Society, Detroit

Secretary

DR. PHILIP VAN INGEN, New York

MR. WM. T. CROSS, Chicago

DR. S. JOSEPHINE BAKER, New York

MR. E. D. SOLENBERGER, Philadelphia

DR. J. HERBERT YOUNG, Boston

Aspects of Propaganda Work from the Viewpoint of Public Authorities
Propaganda Work from the Viewpoint of Private Agencies.
Five Minute Talks on

(a) Newspaper publicity

(b) How national conventions aid propaganda work

STATEMENT BY THE CHAIRMAN:

It has been said that the failure of certain associations or institutions to accomplish their mission has come as a result of defective methods in presenting their purpose.

The idea of creating this committee, the Committee on Propaganda, which is a new committee in this Association, was to give to the people of Milwaukee and other cities the methods which have been used in different communities in stimulating public interest and enthusiasm in this great question of saving our babies, the question of baby welfare.

The scientific aspects of the programs of infant mortality work are discussed in the session on obstetrics, pediatrics, etc. By their very nature they do not have a universal appeal to the man in the street, they seem, perhaps, forbidding and professional.

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This Association is engaged in a nationwide campaign; if it is to succeed it must enlist not only the very best scientific and medical support, but it must also arouse the great mass of the people to the importance of the subject. The Association is fundamentally interested in preventive work. The keynote of prevention is education.

Our people must not only be told the methods of preventing infant mortality, they must be made to realize the vital importance of keeping well babies well. If our people can come to understand the importance of keeping the babies well and not wait to call a physician until the baby has become ill, we shall greatly simplify this question of infant mortality. This session, therefore, is to deal with methods of publicity and propaganda in their broadest aspects. To begin with, we shall have two papers on various methods of propaganda.

One of these papers is presented by a public official, working through a state-wide organization. The other is presented by an executive of a large private agency, working in one of our metropolitan cities.

We are really very fortunate today to have with us Dr. H. L. K. Shaw, of Albany, and Dr. Henry F. Helmholz, of Chicago, both men who are acknowledged leaders in the practical ways of stimulating people to keep their babies well. They are both "live wires," and I am sure you will find their papers unique in interest.

Dr. H. L. K. Shaw is Director of the Division of Child Hygiene of the New York State Department of Health. In that capacity he has aroused New York State as it has never been aroused before. The results as shown by new activities have been startling. Dr. Shaw knows everything that has been done; he is responsible for most of it. Since he has been in charge, the situation is this: the general death rate is the lowest, the death rates for diphtheria, measles, tuberculosis, and scarlet fever, as well as the baby death rate, are the lowest in the history of the state.

I take great pleasure in introducing Dr. Shaw.

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ASPECTS OF PROPAGANDA WORK FROM THE VIEWPOINT OF PUBLIC AUTHORITIES

H. L. K. SHAW, M. D., Director of the Division of Child Hygiene, New York State Department of Health

It is a very great pleasure to be able to present the work of the Division of Child Hygiene of the State of New York. This is the first opportunity we have had to speak for ourselves for we are very young, a mere infant of two years.

The state of New York was the first state in the Union to recognize the claim of the child by creating in its Department of Health a Division of Child Hygiene. Four other states have since come into line.

Previous to the establishment of this division there were four cities having separate divisions of child hygiene, as well as a national Children's Bureau at Washington, D. C. The problems confronting the city, the state and the whole nation are different and demand different treatment. New York City, for example, has a population of over 5,000,000 concentrated in a relatively small territory, while in the state of New York outside its metropolis there are fifty-nine cities with a combined population of about two and a half millions, and a rural population of perhaps 3,000,000. There are over 1,300 health officers in the state who are under the supervision of the State Department of Health.

In New York City the infant welfare stations are under the direct control of the health authorities while throughout the state at large it is impossible to keep in intimate contact with them to any extent.

The Division of Child Hygiene was established January 1, 1914. At that time there were but twelve communities in the state where infant welfare work of any kind was being carried on. In these twelve cities one continued the work throughout the entire year, and in the other eleven it was confined to the summer months. Two of the twelve were supported by the municipality while the others were dependent upon private philanthropy.

The infant mortality outside the city of New York in 1913 was 120 per thousand living births, and had averaged about that for some years past. On January 1, 1916, we were able to point with some de-

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gree of pride to the fact that the infant mortality had been reduced from 120 to 99 per thousand living births, the lowest in the history of the state. Forty-five different localities had infant welfare work established, with seventy-two infant welfare centers. Of these twenty-five received aid in part or in whole from the municipality and only seventeen were dependent on private philanthropy. The most striking fact is that in fifteen of these cities the work is now carried on throughout the entire year.

The role maintained by the Division of Child Hygiene in its work in the state is mainly advisory. The plan followed was to study local conditions in the various places where work of this kind was indicated, to arouse interest and enthusiasm in child welfare activities and to emphasize the great need of reducing infant mortality by suggesting means for the solution of the state's greatest problem. The establishment of infant welfare stations and the employment of a trained infant welfare nurse seemed to be the first step in this direction, and a special campaign of education was therefore arranged to bring this about. The scheme followed in making these local surveys was as follows:

A. Population according to nationalities
B. Ward location of various nationalities
C. Chief industries—number of women and children working in factories
D. Milk supply—scoring of dairies, source and distribution, amount of milk pasteurized, bottled or dipped
E. Compilation of births:
   (a) Sex
   (b) Attendant, whether physician or midwife
   (c) Illegitimate
   (d) Nationality and nativity of parents
   (e) Home surroundings.
F. Study of deaths:
   (a) Number under 1 year
   (b) Number of deaths by months (seasons)
   (c) Nationality of deaths
   (d) Causes of death under 1 month
       " " " " 1 year
       " " " " 5 years
G. Tabulation of births and deaths by wards
H. Number of cases and deaths of communicable diseases by months
I. Number of hospitals, institutions and local organizations
J. Water—system and source
K. Sewage—disposal systems, adequate or inadequate
L. Living and housing conditions—tenements, number of families in rooms, etc.

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When we had made a survey of a certain district and had received an invitation from the proper authorities to conduct an infant welfare campaign, a representative from the department was sent to meet the various agencies interested; a general committee was formed according to the needs outlined and sub-committees were appointd to take charge of the various activities, such as finances, publicity, speakers, etc. A public health nurse would interview some of the mothers, give a talk before the women's clubs and in the churches, and in fact do everything possible to stimulate interest in the coming of the exhibit.

It was felt that an educational campaign which comprised a popular exhibit, lectures and demonstrations would be the best means of arousing interest and convincing the different localities of the necessity of systematized child welfare work. If a community can be aroused to the fact that a high infant mortality rate is not only preventable but that its continuance is a disgrace, there is no question but that infant welfare work can be organized and carried on. In working up the publicity and interest in the meetings, different methods had to be employed in different places. Some localities employed Boy Scouts to deliver the circulars, and in others they were distributed by the milk dealers, newspapers, in dry goods packages, etc., and in various ways the local people devised means to secure a good attendance.

In carrying out the program of speakers, the mayor or village president was asked to preside at the first meeting, and for subsequent meetings a chairman was chosen from the women's clubs, federation of labor or some other local organization. One of the staff of the State Department of Health generally spoke at each meeting. Whenever possible the meetings began with an exhibit of one or more motion pictures, which should always be provided to attract an audience and put it in a frame of mind desirable for the more serious part of the program. A motion picture at the close of the meeting also does a good deal towards holding an audience. The State Department of Health has prepared the scenarios for four educational films. Other films can always be procured for any special occasion.

We have three exhibits which are similar in character and make-up. They consist of twenty panels each, which are 35x60 inches in size, painted white with gray frames and locked together in a row by a small device which prevents the use of pin hinges. They are provided with portable standards which makes it possible to install an exhibit com-

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plete within an hour or two. Care was taken to make the panels look as bright and attractive as possible by means of colored photographs and texts, and by avoiding anything of a morbid or unpleasant subject matter. With each of these exhibits we have a complete model infant welfare station which occupies a space about 15x22 feet and is equipped with everything necessary to demonstrate the work of a regularly organized infant welfare station. The nurse in charge of the exhibit explains the panels and gives informal talks on the bathing, feeding and clothing of the baby whenever a group of mothers can be collected. A life-sized doll, which can be bathed and dressed, was found invaluable in making these demonstrations.

One of the most essential things is to get in touch with the school children. When an exhibit goes to a community, the superintendent of schools and the teachers are interviewed. They often assign an hour for a talk to the pupils by the nurse or one of our lecturers. Generally, it is possible to have the school children attend the exhibit in grades or groups where the nurse gives a little talk and demonstrates the work.

During the past two years our exhibits have visited 137 cities and conducted an infant welfare campaign in each, and during the summer months we have exhibited at 121 county fairs.

The cost of a local campaign depends altogether on existing conditions in each community. The state furnishes the exhibit and lecturers free of charge but requires that the advertising, rental and heating of a hall, and the securing of a motion picture machine be paid for by each locality.

The distribution of child welfare literature by the department is of far reaching influence and value. We have prepared a baby book which is entitled "Your Baby—How to Keep It Well," and this is sent to each mother as soon as her baby's birth is reported, with a letter from the Commissioner of Health. In this way about 100,000 of these books are distributed each year, and about the same number are distributed by the nurses at the exhibits. It was found that a large percentage of the foreign population could not read the English baby book, and for this reason some leaflets were published in Italian and Polish.

In connection with our publicity work we find that most of the newspapers are very willing to print any matter submitted to them. We have prepared material for the newspapers which is sent two or three weeks in advance of the exhibit, and a sufficient number of stories are furnished to provide fresh reading matter each day of the exhibit.

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A Child Welfare Sunday was planned and carried into effect in June, 1915. The department felt that the clergy was an important factor in any child welfare movement and a letter was therefore mailed to every clergyman in the state outside of New York City, together with a circular of information on child welfare entitled "The Most Important Thing in the World," which would give them some idea of the problems of infant mortality and its means of prevention. The response made to this appeal was most prompt and gratifying. Between four and five thousand clergymen expressed their willingness to participate, and in many places various organizations and societies co-operated with appropriate exercises. Since then hundreds of letters have been received by the Division of Child Hygiene from people in all walks of life who have expressed their appreciation and obligation to the department for having brought this information to their attention.

Following a plan originally outlined by Dr. S. Josephine Baker, Director of the New York City Department of Health, a few years ago, this division has worked to establish Little Mothers' Leagues in the schools throughout the state. We now have, as a result of this activity, leagues in operation in seventy-five different localities, many of them having formed from three to six separate leagues, with an estimated total of 25,000 members. The course of instruction embraces twenty lessons and demonstrations. The only expense attached to becoming a member is the payment of ten cents for a very attractive badge which bears the state seal and the words, "Little Mothers' League—Keep The Babies Well." Enrollment cards are supplied by the state, and at the close of the course of instruction a certificate of membership is awarded which has been duly signed by the State Commissioner of Education and the State Commissioner of Health.

There is no doubt whatever but that the propaganda work undertaken by the New York State Department of Health was a very great factor in reducing the infant mortality rate. The results of the two years during which this work has been carried on prove its great value, and such a division should be established in every state of the Union for the purpose of prosecuting work along these lines.

The Chairman: Our next speaker, Dr. Henry F. Helmholz, has been Medical Director of the Infant Welfare Society of Chicago for a number of years. Not long ago that society had three infant welfare stations, it now has twenty-one and its record has been uniformly good. Dr. Helmholz, I know, will tell us interesting things about the way a private agency can carry on propaganda.

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PROPAGANDA WORK FROM THE STANDPOINT OF THE PRIVATE ORGANIZATION

HENRY F. HELMHOLZ, M. D., Chicago

The problem of propaganda from the standpoint of the private organization is essentially different from that of the state or city institution. The private organization usually represents pioneer work in a community that does not appreciate the need of infant welfare work. Everyone who has been interested in infant welfare work any length of time, realizes that it is such a large problem from the financial point of view that a private organization can only lay the foundations on which the municipality or state must later build.

We have thus two lines along which the private organization must work. First, to enlighten the public on the question of the necessity of infant welfare work, interesting it to support the work that the organization is doing, and secondly, to make the public realize that infant welfare work can only be adequately carried on if supported by the municipality. The second line of propaganda is the one that is, I think, almost universally neglected and it is to my mind the most important. In our meetings of the Chicago Infant Welfare Society in speaking of the future of our work, the unanimous opinion is that the city will take over the work some day. If eventually, why not now?

In order to get some idea of what various private organizations were doing in the way of propaganda, I sent to 56 organizations affiliated with the American Association for Study and Prevention of Infant Mortality the following questionnaire. 1. What measures are you taking to stimulate public interest in your work? 2. What measures to make the community feel that infant welfare is a municipal problem and should be supported by the city? 3. What literature do you distribute? 4. What program do you carry out as to lectures, demonstrations, etc.? 5. Do you have a baby week, what is the program? In answer to this questionnaire I had 23 letters giving an account of the work being done along these lines. With the exception of two babies' hospitals and two cities, all the organizations were institutions essentially interested in prophylactic work.

The usual method of interesting the public was by the newspapers. Eighteen times this is specifically mentioned. In two instances monthly

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reports were printed in the newspapers. The printed appeal as a means of raising money was given three times. Surprising is the fact that in only one instance was the personal appeal mentioned as a means of interesting the public. In one instance the entire budget was raised by subscriptions solicited by a newspaper. One city has an annual Baby Sunday on which day the clergy of the entire city are asked to preach sermons on the baby. To pass on to the second question, we find the greatest uniformity of answer. There was not a single institution that replied which stated that they had any definite method of work or definite plan in mind to accomplish the municipalization of infant welfare work. Four organizations stated what had been accomplished and two stated definitely that they did not think the Health Department of their city could do the work. Under three, only ten of the 23 organizations distributed pamphlets or leaflets for the instruction of mothers. Under four, only four outlined a definite course of lectures that was being given. Under five, it was found that all but five reported a Baby Week during the past year. The programs were so varied and in many of the instances the details so incomplete that it is impossible to classify the results. It can only be said that emphasis in most instances was laid on the bettering of the babies rather than on the contest. To summarize: It can be said that with a few exceptions the publicity campaign in most private organizations can be greatly improved.

If we now turn to the problem of propaganda, we meet with two main difficulties, first and foremost is the fact that it costs money to make propaganda and an organization that is dependent on private subscription for the most part, cannot afford to spend very much of that money in advertising; and secondly, the difference of opinion that still exists with regard to the amount of good that can be done by leaflets, pamphlets, lectures and demonstrations in educating the mother.

Personally, my ideas on the subject are about as follows: The stimulation of public interest in infant welfare work naturally falls under two headings: 1. To finance the work of the private organization. 2. To make the municipality take over the work. The first part of the problem is one that can best be met by an annual Baby Week when all general publicity activities can be speeded up and the newspapers give more space to the work. At such time when the

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baby is actively before the public a personal campaign is more likely to give results than any other method. The personal element is the essential factor, letters, general appeals through the newspapers, printed appeals are all insignificant when compared with the results that can be obtained by a personal interview. This of course necessitates a large group of workers that are willing each year to canvass a certain group of people. To still further bring into play, the personal element, we have found it very advantageous to have different groups of women responsible for individual stations. So for instance, we have an Edgewater, an Evanston and a Hyde Park group interested in the Infant Welfare Society, but especially interested in the Edgewater, Evanston or Hyde Park Station. For continuity of effort and results obtained, this individualization of stations has brought more new life and interest into the work than any other one thing that we have done. By this means, we have obtained a large number of interested groups in our city willing to go out and personally tell of the benefits of Infant Welfare work to the community. By lectures one can arouse the interest, but of itself it is usually insufficient to obtain financial return unless it is followed up by a personal interview or better still by a visit to an Infant Welfare station. The second half of the program is more difficult and as seen from the returns has received very little attention. The Infant Welfare Society of Chicago in this regard has done just as much as the other organizations. It seems to me by far the most important aspect of the whole problem to make the municipality recognize its duty to the infant. A definite campaign ought to be outlined and a certain amount of money set aside to carry on this work. The loss of infant life in Chicago due to preventable causes if figured out in dollars and cents would make a very strong argument to present to the public. The mere presentation, however, is not sufficient and it must be held constantly before the people until the public conscience is sufficiently aroused to settle the problem. It would be money well invested if an organization like the Chicago Infant Welfare Society would start a compaign to make the city take over the work on the standards that have been established. We might for a year or two do less work in the field but after our end had been accomplished, we would have both time and money to spend on other problems that still remain untouched.

As regards leaflets, pamphlets, lectures and demonstrations to educate the mothers, we must distinguish very sharply between the

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different strata of society. The districts in which practically all of the infant welfare stations are located, practically excludes the use of these means. After six years of work, we feel that results are to be obtained only by personal contact between doctor and nurse and the mother. I can conceive that in better situated communities, leaflets and pamphlets may be of great use. Under Baby Week I have only one suggestion In connection with a general campaign for funds, it is an excellent thing as a means of arousing interest and offering a setting for personal solicitation of funds.

As a means of arousing interest in new communities, we have tried out in the past year in place of a baby contest, the conduction of an Infant Welfare Station for one or more days in these communities. During the early summer, Dr. Hoffman, our assistant medical director, and one of our nurses spent two days in Kalamazoo, Michigan, conducting an infant welfare station for that community. I will let the results speak for the advantages of this method of procedure. Kalamazoo has now a private organization which has built a special house for infant welfare purposes, is employing a nurse and has two volunteer physicians and sufficient funds to conduct the work for over a year.

In conclusion, let me emphasize again the importance of each private organization working out a plan to make its city do the Infant Welfare Work.

DISCUSSION

The Chairman: If you look around this room you will see many placards representing work being done for the prevention of infant mortality by different agencies in this country. Many of these are private agencies, supported by private funds and in most cases of this kind the work has been initiated by private enterprise.

We have now reached the second part of our program, the discussion. Dr. Dearholt and Mr. Cross will lead the discussion, and after that there will be opportunity for open discussion from the floor.

Dr. Hoyt E. Dearholt, Executive Secretary, Wisconsin Anti-Tuberculosis Association: The propagandist who makes only an indifferent success of enlisting the support of newspaper editors and the interest of newspaper readers is not entitled to plume himself especially. Editors by trade and training are concerned in the making and reporting of news. More than that, they are, almost without exception idealists, however vehemently they may disclaim the fact. As a class they have high professional standards and a thorough appreciation of their opportunity to influence the thought, life and habits of their patrons. They are trying conscientiously to meet that responsibility. Too many propagandists do not realize this. Frequently they approach the newspaper with prejudices and even suspicion, and a thorough lack of appreciation of the fact that the

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editor himself is struggling with a few very important problems of his own, among them the increasing cost of labor and print paper. They desire to secure from the editor the best and most he can give. But in return they give of themselves most sparingly and sometimes with a form of supercilious contempt for the medium they wish to employ.

To the wise propagandist the newspaper is a powerful machine ideally and practically adapted to his purpose of putting his teaching into the consciousness of his constituency without affectation and loss of time. To him the term "people's forum" is not trite. He knows the supervalue of the printed word and he does not despise his tool. Instead as a skillful craftsman he knows its uses and its limitations.

The propagandist who would become wise in the use of the newspaper should know something of the newspaper game. He should know the rules, if only in order that he may judge intelligently, how far he may safely go in violating them. Incidentally, Prof. Bleyer's "Newspaper Writing and Editing," which represents many years of painstaking laboratory dissections and analysis of current newspapers, may prove useful to students who realize that the newspaper writer has a technique which differs from that of other literary workers.

The man who knows what it costs to set a column of type will not waste words. Instead, he will write short snappy sentences, tell or indicate his story near the beginning and not conceal it near the end of his composition. The man who knows much about how news breaks knows that Monday's is commonly a lean paper and that a good story is welcome to both editor and reader. I believe it was a newspaper man who said that the real cause of the break between Roosevelt and Taft was the fact that the latter discovered what the former well knew, that Sunday night offers a most promising release date.

But important as is time given to learning the work, time employed for considerate preparation of copy, time of readers, time of placing and the value of your time which has limited my discussion of this big theme to five minutes, other even more important factors in the most successful use of the newspaper for propaganda purposes remain to be listed.

Among these may be briefly mentioned, *First*, "A nose for news," that is, more or less instinctive appreciation of what occurrences or ideas constitute a framework for a good "story;" *Second*, Enthusiasm; *Third*, The patience to wait but still keep on striving for cumulative effects; *Fourth*, Ability to suppress a squeal when inadvertently misquoted or misunderstood; *Fifth*, Sufficient boldness to take the newspaper as it is and not as you might have it; and finally a lofty idealism combined with a practical clearly defined purpose which draws a distinct line between what is true though popular and what is merely "yellow" notoriety.

The Chairman: We have with us today the secretary of probably the largest welfare conference of this country. He thoroughly understands how a conference, a national convention, can stimulate interest in a given welfare subject. I take great pleasure in introducing Mr. Cross.

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Mr. Wm. T. Cross, General Secretary, National Conference of Charities and Correction, Chicago: The practical question that underlies the subject which you have assigned me, I assume, to be. How can the propaganda of the prevention of infant mortality be aided through the cooperation of national conventions?

In the practical solution of this problem a primary distinction is that between organizations which devote themselves to the furtherance of specific propaganda and organizations of a scientific character which are committed to no principle but which are constantly analyzing the facts of the day in the fields of their particular interests. On the one hand, we have propaganda groups like the American Federation of Labor, or any political party; the other hand, discussional organizations like your own or the National Conference of Charities, or many others of the great number of associations interested in social improvement. The line of demarcation is not clear; there are some groups which, while committed to certain principles, are nevertheless free to discuss at any time the advisability of adopting new standards. An example would be the National Association for the Study and Prevention of Tuberculosis.

These national conventions, in general, may lend aid chiefly through (1) their discussions at annual meetings, scientific or otherwise; followed, perhaps, by formal conclusions or the adoption of resolutions; (2) their publications, some of which are of general character, not being limited to the spread of official information; and (3) the dissemination of ideas through first-hand knowledge of the membership of the national group, by such means, for example, as exhibits, at their annual meetings.

Another observation which is necessary to make clear the path of better co-operation, pertains to the limitations of these national groups. For the most part the conventions in which you would be interested are scientific and professional. They represent selected groups, largely of voluntary character. They are not representative of sections of the general population. The latter may be reached only through the adoption of popular propaganda. Nevertheless, we may take courage from the fact that the acts and attitudes of individuals are, these days, in large measure, the resultant of group decisions and attitudes. A man is not certain of his politics or of his theories until these matters have been discussed in his club, or in his medical society.

The possibilities of co-operation of national conventions may be made clearer by illustration. The Anti-Saloon League is a propaganda association. It has a generalized, popular constituency; a management of the business type, which, I imagine, is, as a matter of practical necessity, highly centralized. It cultivates opinion widely through its literature, concentrating on practical issues. Can you show that the saloon kills off babies? If so, the fact will be heralded across the country by the Anti-Saloon League as authoritative. The object of the act of co-operation, however, would be to close the saloon. The co-operating organization would not go a step beyond in the furtherance of your propaganda. Doubtless the facts you would produce would be applied more concretely and pointedly than in a discussional organization.

On the other hand, the National Conference of Charities and Correction is a discussional group. It has a professional constituency. The subject of infant

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mortality gets occasional attention on our programs. It would be considered any year only after you had convinced the conference organization of the importance of the subject from a scientific standpoint. The organization might be used to start a great wave of interest among social workers of the country in the prevention of infant mortality. But you would probably not be able to trace the results so concretely as in the case of the temperance organization. On the other hand, you would be reaping fruitage of the discussions of the non-propaganda body long afterward, in diverse forms of application.

There is no authoritative court of public opinion in this country corresponding to the French Academy. There is no one agency to which you may go, among national bodies, to make sure of the proper reception of your propaganda by the country at large. However, among social, medical and educational groups there are many which you might select to aid effectively in the study of infant mortality and in the adoption of measures to prevent it.

The Chairman: In all the annual reports and literature that come from Infant Welfare Associations it is clearly and graphically evident that the idea of the propagandist is needed. I have in mind an association in Boston interested in this field. It was found in 1909 that the infant death rate was 133; this rate was steadily decreased largely by the work of the association, going down to 125, 115 and 111, and then, in 1915 to 102 or 103. When the association started it cared for six or seven hundred babies, the work increased till it cared for well over four thousand. That fact was placed on the back of the annual report of the organization, with a diagram showing the figures. It was so graphic that it hit everybody in the face directly the book was taken up, it was perfectly clear from it that something was being done for the prevention of infant mortality. I think that is a method that could be emphasized at a session like this.

Then there is the side of actual advertising. The Committee on the Prevention of Tuberculosis of New York City and other organizations go right to the commercial firms and beg successfully for advertising space, beg space in the street cars—if you can't get it from the street car company, as in my experience once, then go to the individual advertisers. I have found them willing to let us run the tuberculosis card with perhaps underneath "Courtesy of....." mentioning the name of the firm. In Boston we got space from the street car company. The people who get out electric signs will give space to a city-wide, well-conducted welfare work.

Dr. Fred H. Allen, Holyoke, Mass: I would like to say just a word in reference to Dr. Helmholz's paper. Holyoke has been fortunate in that from the start our work has been entirely financed by the city. Perhaps you would like to know how we did it. It means a great saving of energy in that under private support, at least twenty-five per cent of the money has to be paid back for the cost of collection.

First, prepare your soil. We were somewhat prepared, because Holyoke had, several years previously, bought the private gas plant and managed it successfully. Later it built a model electric plant and now supplies its own electricity.

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Then it developed a fine system of playgrounds and parks. So the city was educated to the idea of municipal control of things meant for municipal benefit.

After the soil is prepared, and of course the ways to do it are innumerable, get your trained worker and get your plans. Our President has been for sometime connected with various women's clubs, local and national. She wrote personal letters to every physician in Holyoke. If he did not answer she called him on the telephone and got his opinion as to whether it would be a good plan for Holyoke to take up baby work. Having gotten an expression of opinion from the physicians and found out who would help, she got in touch with prominent people of means and influence, not only social influence, but also political, and one of these people was the Mayor of the city. She interested him, and convinced him that it would be a political asset to him to be associated with a work which was bound to make the city safer and better to live in. She also interested the wives of several other men who were politically influential. Having organized a committee we went to the Mayor and said, "Will you help us out?" He gave us money from the contingent fund until we had proven to the city as well as to him that it was a good thing not only politically but physically and morally to have a milk station and the work that goes with it.

After working two or three years we became incorporated. The Mayor said to us, "You have proven you are doing good work and you deserve the backing of the city." All we had to do then was to submit a budget to the City Government, and a certain sum was appropriated each year to our use. We get each year from the city an appropriation of $3,750, and each year as we go on impressing the city with the value of our work we shall get more money and accomplish even more work.

For a city of the size of Holyoke, 65,000, a newspaper has tremendously more influence than any one paper can have in a city the size of Chicago, for instance. Our newspapers printed anything we wanted and were of great assistance to us.

Dr. Bertha F. Johnson, Chief, Division of Child Hygiene and Nursing, State Department of Health, Trenton, N. J.: During Baby-Week in Trenton the committee had planned to hold a baby contest, but the physicians in the town thought it unwise because of various epidemics, and it was decided to have a Better Mothers' Contest. The Division of Child Hygiene of the State Department of Health prepared a list of 25 questions which were published in the daily papers. The Metropolitan Life Insurance Company offered a prize of $5 in gold for the best answers. We thought it a small task to prepare the questions and it stimulated interest. We tried to formulate the questions so that the answers would not be too obvious. One question was "How soon after feeding do you bathe the baby?" and a number of mothers answered, "I do not bathe him after feeding. I bathe him before"—one could almost hear the scorn in the reply.

We were requested to correct the papers and decide on the prize winner, and the newspapers gave us nearly two columns of space in which to discuss the contest and the correct answers. This gave us an opportunity to state our ideas about the proper care of children and proved a good publicity measure. A com-

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mittee of ladies visited the homes of the mothers who had handed in perfect papers and the prizes were awarded to the babies who showed evidence of the best care. It was found necessary to make three additional prizes as there were four babies who seemed to be equally well cared for.

Mr. John Hall, Health Officer, East Orange, N. J.: We adopted a scheme of using the stores of our four cities in connection with our Baby-Week in the Oranges last spring.

When we started our publicity campaign we canvassed practically all the stores, requesting them to put something suggestive of Baby-Week in their windows at that particular time. We received excellent co-operation, as a rule, and some of the ideas were very original. One hardware store showed a baby scale with a doll in it and a legend reading, "Gee! I'm glad I live in South Orange; no sick babies here." A drug store had half of its window space filled with talcum powder, bottles and other babies' supplies. The other side of the window contained razors, shaving brushes and soap. Above were two signs reading, "Articles for the little shaver" and "Articles for the big shaver." Others were not so clever, but attracted a great deal of attention.

Excellent co-operation was received from the moving picture managers. Two reels were rented from the Educational Department of the General Film Company of New York and one was shown at each of our ten theatres and in one of the schools. (These films can be rented very cheaply. We paid only two dollars a day for a week.) Approximately twenty-four different audiences saw each of these pictures. The reels were "The Man Who Learned," a story of clean and dirty milk, and the "Error of Omission," which showed the possible difficulties arising from the failure to file a birth certificate.

In addition to these rules, five slides were sent to each of the theatres with the request that they be shown at all the performances during the week. Besides advertising the local exhibits some of the legends on the slides were as follows:

"7,000 Babies die in New Jersey every year
Over half of these deaths are preventable."

"This is Baby Week. Help save the Babies."

"Is your Baby's Birth recorded? Ask the Board of Health."

"The best kind of Preparedness
Save the Babies."

Dr. A. B. Emmons, 2nd, Boston: In Boston we used similar methods in regard to the department stores, during Baby Week, very successfully. The three largest department stores had a regular hall given up to talks every day; there were volunteers from among physicians, nurses and various organizations, and the programs were announced a week or so in advance.

Dr. De Vilbiss was telling us this morning that in Kansas by the offer of a silver cup for the healthiest county there had been created an enormous interest and a competition which is going on at the present time. The Governor was to appoint the judges of this competition, and the whole thing was being worked out with education as the special object in view. I believe inter-city competitions have been organized in the same way.

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GOVERNMENTAL ACTIVITIES

AND

VITAL AND SOCIAL STATISTICS

Friday, October 20, 1916, 2.15–4.15 p. m.

JOINT SESSION

Chairman
DR. WM. C. WOODWARD, Washington

COMMITTEES
VITAL AND SOCIAL STATISTICS
Dr. John S. Fulton, Baltimore, Chairman

GOVERNMENTAL ACTIVITIES IN RELATION TO INFANT WELFARE
Dr. Wm. C. Woodward, Washington, Chairman

Dr. H. J. Benz, Pittsburgh
Dr. Alan Brown, Toronto, Canada
Dr. Lydia De Vilbiss, Topeka
Dr. Wm. J. Gallivan, Boston
Dr. Hastings H. Hart, New York
Dr. Frances Hollingshead, Columbus, O.
Dr. Bertha F. Johnson, Trenton
Dr. J. W. Kerr, Washington, D. C.
Dr. Millard Knowlton, Trenton
Miss Julia C. Lathrop, Washington
Dr. Julius Levy, Newark
Dr. E. T. Lobedan, Milwaukee
Dr. H. L. K. Shaw, Albany
Dr. Ellen A. Stone, Providence
Dr. Cressy L. Wilbur, Albany
Dr. C. W. Wyckoff, Cleveland

TOPICS

I. Birth Registration

II. The Work of Governmental Authorities for the Control and Prevention of Infantile Paralysis during the Epidemic of the Current Year

Organization and Methods for Prevention of Spread of Infantile Paralysis in Interstate Traffic

Epidemiologic Studies of Infantile Paralysis

Brief Reports on the Newark Plan for the After Care of the Victims of Infantile Paralysis. Its Organization and Practical Working.

STATEMENT BY DR. WOODWARD:

This committee was created during the past year for the purpose of studying the federal, state, city and other governments in relation to infant welfare work of all kinds, to determine where that work is deficient—we will all admit it is deficient—and how deficiencies can be met. The problem was manifestly too large to be seriously attacked in a fraction of a twelve-month period, and it was thought best the committee should confine itself at this meeting to a consideration of one very pressing problem. There has been offered, however, from the Committee on Social and Vital Statistics, one paper that will be read by title and printed in the proceedings, that is, a paper by Dr. Dublin, of the Statistical Bureau of the Metropolitan Life Insurance Company, entitled "Birth Registration in American Cities and Its Relation to Infant Mortality Rate." Without objection, that paper will be considered as having been read by title, and will be printed in the Transactions.

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THE PRESENT STATUS OF BIRTH REGISTRATION IN AMERICAN CITIES AND ITS RELATION TO THE INFANT MORTALITY RATE

LOUIS I. DUBLIN, Ph. D., Statistician, Metropolitan Life Insurance Company, New York

It requires no extensive statistical research at this time to prove that infant mortality in the United States in recent years has been much reduced and that it can be still further reduced. Communities, however, are not content with this general proposition but desire to know the part they individually play in this reduction. They have their own health problems and they are interested primarily in the facts for their own localities. Cities very properly wish to know what their present infant mortality is, what the trend of that mortality has been during the last five or ten years and what they may hope to accomplish in the next few years in still further reducing their losses. These questions, as we shall see, cannot be readily answered. In this paper I propose to consider the chief limitations on our effort to determine accurately the facts of infant mortality in American cities. I shall show that many of our cities are indeed in no position to know the trend of their infant mortality. It must be clear to us that as scientific men we must first insist that our programs to control disease be based on reliable foundations and not on vague impressions or on statistical data subject to very serious error.

The infant mortality rate is the ratio between two figures. The first is the number of births registered in a given period (usually a calendar year); the second is the number of deaths of children under one year of age during the same period, stillbirths being excluded from both figures. There are other measures of infant mortality which are somewhat different; but the infant mortality rate as described is the one in commonest use in present day practice. It is obvious that this infant mortality rate is correct or incorrect in proportion to the accuracy of the figures which compose it. If either one or both are wrong the rate will likewise be wrong. Let us consider a few of the possibilities. If the deaths of infants under one are not all recorded, the rate will clearly be too low. Again, if the number of births is, for any reason, not completely registered the infant mortality rate will

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appear higher than it really is. Finally, if both deaths and births are under-registered, the rate will be wrong except in the rare instances when numerator and denominator are incorrect in the same ratio.

It must be clear, therefore, that the accuracy of the infant mortality rate and of its derivative, the trend of the infant mortality rate, depends on the completeness of registration of births and deaths. Of these two, the registration of deaths has been insisted upon longer by the communities of our country. Considerable state and municipal machinery has been put into operation for this purpose. Laws are in effective operation over a large area of the country, the so-called Registration Area for Deaths, and the interest of the communities and of physicians has been developed to make such registration of deaths more and more complete. We can assume safely that in the great majority of the cities and states included in the registration area, which today comprises over two-thirds of the total population of the country, death registration is practically complete. The margin of error is certainly not greater than ten per cent, and in many cases it is much less.

Much more serious for our purposes is the matter of birth registration. There is as yet only the beginning of a Registration Area for Births. Adequate legal provision for birth registration exists in a number of states but in many where there is a law it is certain that the law is not enforced. Such is the general consensus of opinion of those most interested in this phase of our vital statistics.

Accordingly, during the course of the last year, we undertook a systematic inquiry into the present status of birth registration throughout the United States. To this end we wrote to the registrars and other officials of all the states and cities which have been included in the Registration Area for Deaths since 1910. We asked for the number of births registered in their respective communities during each of the years since 1910. In all, about 500 inquiries were sent; replies were received from 16 states and 168 cities. We at once found it necessary to disregard the replies from the state officials; birth reporting is still a local function and it is only with reference to the cities that any inquiry can possibly be worth while. In all, we found only 144 cities whose replies were sufficiently complete to justify analysis. Fortunately, this group of cities is representative of the entire country since it includes the larger as well as the smaller ones.

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In this paper I shall put at your disposal an analysis of the replies from these cities.

The birth rates for the years between 1910 and 1915 for each of the cities were calculated. We found that these rates varied markedly not only from city to city but also from year to year in the same cities. Such large annual variations do not ordinarily occur in vital phenomena during short intervals of time and it was obvious that we were concerned with a disturbing factor, probably faulty birth registration. Our problem from this point was to investigate the trustworthiness of the number of births reported in the cities in question.

There are fortunately a number of simple tests of the accuracy or, rather, of the completeness of birth registration. The first is that the number of births registered in any community in a calendar year shall be greater than the number of living children under one year old. For this test the two sets of figures for the year 1910 were available, namely, the census returns for children under one and the replies to our questionnaires giving the number of births registered during the year. We found that the births actually had exceeded the number of children under one in a large number of the cities, although the excess varied considerably from city to city. In 23 out of the 144, or in 15.9 per cent of all the cities, however, the reverse was true, the population under one did exceed the number of births reported for the year. In all these cities the registration of births was clearly inaccurate and very probably to a high degree; in some, the births registered were certainly less than one-half the true number. Table I on the next page gives a list of 23 cities arranged in the order of the supposed inaccuracy of their birth registration as indicated by this test. The group includes some small towns but also a number of large cities. Thus we find Baltimore, Chicago, Jersey City, Nashville and Birmingham, Ala., with populations of over 100,000; a few others had populations between 50,000 and 100,000.

The second test of the accuracy and completeness of birth registration is the extent to which the birth rate varies from year to year. We should view with suspicion violent changes in the birth rate from year to year or within a few years unless a plausible explanation is at hand. Applying this test we find a number of cities where there has been a decrease between 1910 and 1915. For the most part these decreases are moderate and may very well reflect the true con-

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Table I.

CITIES WHERE POPULATION UNDER 1 EXCEEDED BIRTHS REGISTERED IN 1910.

City	Population under 1 1910	Excess over births	Per cent excess
Riverside, Cal.	269	9	3.3
Baltimore, Md.	10,239	381	3.7
Winthrop Town, Mass.	190	9	4.7
Birmingham, Ala.	2,939	162	5.5
Camden, N. J.	2,081	123	5.9
Kearny, N. J.	395	30	7.6
Sunbury, Pa.	361	33	9.1
Norwood, Ohio	297	29	9.8
Fort Wayne, Ind.	1,104	126	11.4
Youngstown, Ohio	1,954	260	13.3
Santa Cruz, Cal.	160	26	16.3
Superior, Wis.	872	153	17.5
Wheeling, W. Va.	781	147	18.8
Elizabeth, N. J.	1,902	362	19.0
Alpena, Mich.	301	64	21.3
Nashville, Tenn.	2,139	470	22.0
Hammond, Ind.	548	133	24.3
Jersey City, N. J.	6,229	1,662	26.7
East Chicago, Ind.	654	232	35.5
Stockton, Cal.	324	135	41.7
Chicago, Ill.	49,073	24,705	50.3
Madison, Wis.	474	257	54.2
Ogden, Utah	647	389	60.1

dition of the birth rate in the cities. In some, however, the reduction is very marked indeed. Lynn, Mass., for example, showed a birth rate in 1910 of 26.8 per 1,000; in 1914 the figure had been reduced to 22.3 and in 1915 to 22.1. Such a condition very properly raises a question as to the accuracy of the birth registration in this city in the years 1914 and 1915. In Dover, N. H., the birth rate in 1910 was 23.9 in 1914 it fell to 18.2 and in 1915 rose again to 23.7. These returns also are subject to question. More serious, however, is the fact that in a large number of cities the birth rate increased in a very suspicious manner. In some cities the birth rate in 1915 was close to or even more than twice that in 1910. A list of eight such cities is given in the following Table II.

Table II.

CITIES WITH EXCESSIVE INCREASE IN BIRTH RATES DURING PERIOD 1910 TO 1915.

City	Birth Rate per 1000 Lives 1910	1914	1915	Per Cent of Increase, 1910 to 1915
Hammond, Ind.	19.7	33.7	32.4	64
San Diego, Cal.	11.8	22.8	20.4	73
Trenton, N. J.	15.8	31.1	28.0	77
Chicago, Ill.	11.1	21.7	21.1	90
East Chicago, Ind.	21.7	47.1	42.1	94
Stockton, Cal.	8.1	17.0	16.1	99
Ogden, Utah	10.0	29.8	25.6	156
Madison, Wis.	8.5	25.7	22.4	164

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The maximum increase in the birth rate is noted in Madison, Wis., where in 1915 the birth rate was 164 per cent. higher than in 1910. Increases in birth rates as shown in the preceding table are absolutely inexplicable on the basis of a normal increase in fertility and can be explained only on the ground of improved birth registration. Our conclusion is, therefore, that in the cities listed above the number of births reported in 1910 was entirely untrustworthy and that birth registration had improved perceptibly in 1915. But it must not be concluded from this that the birth registration in 1915 had attained its true value in all of them.

In this connection, an examination of the data for the 144 cities as a whole will be of interest. Because of the belated arrival of some of the 1915 figures we were compelled to compare 1910 with 1914. We found that the number of births in these cities combined increased 20.7 per cent during the interval between 1910 and 1914. The increase of the population of these cities during the same period was only 10.2 per cent. This last figure must be considered in the light of the fact that during the period the chief source of increase in the population of American cities was through immigration. As might be expected the birth rate for 1914 exceeded that for 1910, the figures being 24.7 and 22.6 respectively. Included in the 144 cities, however, are two of the largest cities in the country, namely, New York and Philadelphia, which together account for 31 per cent of the total population of the 144 cities. A very different condition is found in them. In New York City the birth rate in 1910 was 26.9 per 1,000, and in 1914, 26.4. In Philadelphia the two figures were 24.9 and 24.8. The two cities combined gave a birth rate of 26.4 in 1910 and 26.0 in 1914. If we eliminate them from consideration in our total we find for the residue that the birth rate has very markedly increased since 1910; it was then 20.9, and in 1914, 24.2. We are accordingly confronted with the interesting fact that in two of the largest cities of the country, where birth registration has been fairly reliable since 1910, the birth rate has decreased. In the 142 other cities, taken as a group the birth rate has very decidedly increased. In view of the evidence already at hand we are much more likely to be concerned in these figures with an improvement of birth registration in the cities as a unit than with an increase in the birth rate.

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To further satisfy ourselves as to this we correlated the increase in the birth rate in the cities between 1910 and 1914 with the condition of the birth rate in 1910. In other words, we attempted to find out by means of a more refined analysis whether a low birth rate in 1910 was in general followed by an increase in the birth rate in the four subsequent years, or vice versa. Our findings are very clear on this point. We obtained a negative correlation of over .45. This is significant; for it shows that on the whole wherever the birth rate in 1910 was below the average, there appeared during the next four years an increase in the number of births proportionately greater than that in the population and furthermore that the greater the deficiency in the birth rate in 1910, the greater the proportionate increase in the birth rate after that year.

There are few who, in view of the results of the tests we have applied, will doubt the incompleteness of birth registration in 1910 or in the next succeeding year or two. We must now consider the more important question whether the birth registration of 1915 may be considered reliable. To this end we arranged our cities in the order of their increasing birth rates for the year 1915. The lowest birth rate in our list of cities was in Santa Cruz, Cal., where the rate was 10.9 per 1,000; the highest birth rate was in Chicopee, Mass., where it was 42.7. The average birth rate was 24.5. If the reader will turn to the table in the appendix in which the birth rates of the 144 cities in 1914 and 1915 are given, he will see that the rates for many of the cities vary markedly from this average. Such variability in birth rates can hardly, I believe, be explained on the basis of climatic, industrial or racial difference alone. The only conclusion is that many of the cities with extremely low birth rates are still far from having solved their problem of birth registration.

We can at this point apply a third test of the acccuracy and completeness of birth registration, the extent to which the birth rate of a city falls below what may be considered as the minimum normal birth rate for American cities. It is difficult, at this time, to lay down a general law, as to what the birth rate of American communities should be since that depends upon the constitution of the population and other economic factors. The proportion of foreign to native born is perhaps the most important factor; the age constitution and the proportion of males to females are also to be con-

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sidered. However, it appears to me to be entirely justifiable to doubt the accuracy of a birth rate in any but a few of our cities which is less than 20 per 1,000 of the population. In some communities where the foreign born stock predominates a birth rate under 25 should be accepted with question. In a number of communities even a birth rate of 25 per 1,000 may be considerably below the truth. For purposes of administrative control, however, a birth rate of 20 should be considered by the health officer as a minimum and his every effort thereafter should be to raise this minimum as his machinery for checking poor registration is improved. In 1915, 32 of the cities included in the study fell below this very conservative minimum. The other tests we have applied, however, indicate that the proportion of the 144 cities with defective birth registration in 1915 is much higher than this.

The defects in present day birth registration must result in very serious embarrassment to the practical worker in the field of infant hygiene, for, as was pointed out at the beginning, incomplete birth registration exaggerates the infant mortality rate and destroys comparability between the figures for different communities. I can illustrate this point with facts for the city of Baltimore in 1910 and thereafter. In 1910, the infant mortality rate for this city was 217.7. In 1915 the rate was 119.8, a reduction of nearly one-half. This is a most remarkable showing for so short a period and, if true, it should be a source of great encouragement to the health officers and private agencies of Baltimore concerned with the control of infant mortality in that city. There are, however, a few disturbing facts which must be taken into consideration. Thus in 1910 the recorded birth rate was only 17.6 per 1,000 population; in 1915 it had increased to 23.3. This suggests that we are concerned not alone with a reduction in infant mortality but also with the effects of improved birth registration. We find, for example, that while the population increased 4.3 per cent between 1910 and 1915, the number of births actually increased 38.3 per cent. If we apply the birth rate of 1915 to the population of 1910 we would obtain 13,037 births as against 9,858 births which were actually registered. The infant mortality rate for 1910 on this basis would have been 164.6 as against 217.7 which is the rate quoted above. It must be evident, therefore, that the marked decrease in the infant mortality rate is not

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all clear gain and that a large amount of it is fictitious, being the result of improved municipal bookkeeping.

We could, in like manner, take the returns of a large number of other cities which are undoubtedly proud of their successful campaigns against infant mortality and show, like Baltimore, that much of their supposed life saving is simply a reward for their recent growing interest in birth registration. It would be highly desirable in this connection if the annual circular of the New York Milk Committee on infant mortality rates in the cities of the United States, in singling out cities for praise or blame dependent upon their low or high rates, took into consideration the effect of poor birth registration on infant mortality rates. A number of the cities listed in the Milk Committee's report for 1915 show exaggerated rates, since the births reported are clearly under estimates. This is especially true for a number of the smaller cities.

In view of the present condition of birth registration and the resulting unreliability of infant mortality rates, what can the statistician offer as a substitute to serve until birth registration in our cities is more complete? Frankly there is no satisfactory substitute for the infant mortality rate. A number of measures have from time to time been used. Thus, the "infant death rate" which is the ratio of the number of deaths of infants to the number of living children under one has been employed by the Census Bureau. This is, however, subject to very serious error because the number of living children under one is known approximately only for census years and is even then subject to very serious error of misstatement.

Another index is the ratio of the number of deaths of children under one to the total population of all ages as estimated for the year. This measure has the advantage that both numerator and denominator which enter into it can be made fairly accurate. It is especially useful in determining the trend of infant mortality over a short period of years in any one city. However, difficulties at once arise when it is attempted to compare the rates of different communities with one another. Differences which may appear in such comparisons may not at all be the result of higher or lower actual mortality rates but rather of the different birth rates in the two places. Thus if two cities of the same size, say 100,000, have birth rates of 25 and 30 respectively, the city with the higher birth rate will have the largest number of infants

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born annually, 3,000, as against 2,500 in the second city. A similar infant mortality rate, say of 10 per cent, will result in 300 infant deaths in the one city as against 250 deaths in the other. The actual infant mortality rates would be the same but the substitute measure will indicate a higher death rate in the city with the higher birth rate, 3.0 as against 2.5 per 1,000 population. Nevertheless for communities where birth registration is known to be very incomplete, the error that results from the use of this substitute index will be less than that resulting from the use of the incorrect number of births. The general principle is that when dealing with factors of error it is safer to work with large numbers than with small, for example, with total population than with births.

Another measure which is sometimes used in communities with poor birth registration is the percentage of infant deaths to total deaths. This ratio, like the previous one, has the advantage that the figures entering into it may be presumed to be fairly accurate. The measure, however, has the serious disadvantage of all such proportions in that it does not take into consideration the number of infants exposed. We may very well have, for example, an unusually high proportionate mortality with a low infant mortality rate; this would be the case if the general mortality rate was low. Again a low percentage of infant mortality may occur where the actual infant mortality and the general mortality rates are both high. It is not at all difficult to present a list of cities with high infant mortality rates and low proportions and conversely.

There is, therefore, no satisfactory substitute for the infant mortality rate. In order to have a measure of the mortality of infants, we must know of necessity the number of infants exposed to death and this means that we must have complete birth registration.

My purpose, today, is not so much to criticize our present shortcomings as to point out a remedy for a serious evil. Those of us who are interested in the reduction of infant mortality have no choice but to set about to build up machinery for registering officially and quickly every child born. To this end, the way is fairly clear. An adequate law for the reporting of births, the Model Vital Statistics law, is on the statute books of a number of states. Where it is not, the first step to be taken is to have this law enacted. This would apply to the following states: Alabama, Arizona, Colorado, Delaware, Iowa, Indiana, New

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Mexico, Nevada, South Dakota, Oklahoma, Texas and West Virginia. Wherever this law has been or will be enacted it must be enforced. The members of this association can be of the greatest service in this connection either as individuals or collectively to see that every birth in their communities is registered, that as physicians they do this themselves and that as citizens they uphold officials who insist on the fulfilment of the law and the exposure and arraignment of all violators.

In this campaign for the improvement of birth registration the organization with which I am connected desires to play its part. It is probably known to you that for a period of two years, the Metropolitan Life Insurance Company has been engaged in distributing through its agency forces thousands of mailing cards for the purpose of registering births. These cards are addressed to the health officers and registrars of states or cities and are distributed by agents in the homes of policyholders where there has been a recent birth or where a birth is expected. The mother is directed to fill in the name and date of birth of the child and her own name and address and then to mail the card. As an inducement to the mother fill out and mail the card, it calls on the health officer to send literature on child hygiene. A cut of the card used in Indiana is shown on the next page.

The plan has proved of assistance to many state and municipal health officers. Besides enabling them to register births which otherwise would have escaped official registration, it has, by singling out those who persistently fail in complying with the requirements of the law, given them at least a partial check on delinquent physicians and midwives. If these individuals were followed up with prosecutions and fines, as Dr. Wilbur planned to do in New York State, the number of violations of the law would rapidly be reduced. We have received many communications from registrars all over the country testifying to the aid they have received through our co-operation. I am in a position, at this time, to offer you a more extensive development of this plan. If health officers and other persons interested in the reduction of infant mortality in the several states and cities of the country will write to us, we will see that an adequate supply of the cards is distributed to our policy holders. We will moreover follow up this distribution to see that the interest of our field staff is maintained. We are convinced of the efficiency of the plan in improving birth registration.

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PRIVATE
MAILING
CARD

DR. J. N. HURTY, Secretary

State Board of Health,

Indianapolis, Ind.

Stat. Form 6
Feb. 1915

Metropolitan Life Insurance Company

NEW YORK

The Health Officer .....191.....
(DATE)

Dear Sir:

My baby.....

was born on.....191.....
(MONTH) (DAY)

at .....

.....
(NUMBER) (STREET) (CITY)

Please send me your literature on how to keep my baby well.

.....
(PARENT)

The Metropolitan Life Insurance Company takes this means to improve birth registration and to further infant hygiene.

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It is certainly to be hoped that those interested in reducing infant mortality in American cities will concentrate their attention on the problem of birth registration. At the present time we cannot measure with any degree of accuracy, except in a few cities, the effectiveness of our program for the reduction of infant mortality. Too much, as we have seen, is taken for granted and credit is appropriated beyond measure for reductions in infant mortality that are much greater than actually have occurred. We should remove, for all time, the handicap which mars the entire field of our work. Our campaign for the next few years is clearly marked out. We should work to establish a Registration Area for Births which shall be nationwide and as accurate as it is extensive.

APPENDIX A

Registered Births and Birth Rates Returned by 144 Cities in United States 1910, 1914 and 1915

City	No. of Births 1910	No. of Births 1914	No. of Births 1915	Birth Rate per 1,000 Population 1910	Birth Rate per 1,000 Population 1914	Birth Rate per 1,000 Population 1915
Birmingham, Ala.	2,777	3,046	3,040	20.7	18.3	17.5
Mobile	1,058	1,178	1,086	20.5	21.2	19.2
Alameda, Cal.	383	414	442	16.3	15.7	16.4
Los Angeles	5,476	8,308	7,925	16.9	18.9	16.7
Riverside	260	306	278	16.9	16.7	14.6
San Diego	472	1,114	1,045	11.8	22.8	20.4
San Francisco	6,435	7,308	7,649	15.4	16.3	16.8
Santa Cruz	134	162	153	11.9	12.0	10.9
Stockton	189	436	554	8.1	17.0	16.1
Colorado Springs, Colo.	457	432	467	15.6	13.6	14.4
Bridgeport, Conn.	2,984	3,763	3,908	29.1	32.6	33.0
Naugatuck	359	325	361	28.1	23.8	26.0
New Britain	1,607	1,946	1,964	36.3	38.4	37.6
New London	485	617	680	24.6	30.0	32.7
Wilmington, Del.	2,082	2,500	2,600	23.8	27.2	27.9
Washington, D. C.	7,031	7,130	7,067	21.2	20.2	19.7
Jacksonville, Fla.	1,020	1,871	1,688	17.5	26.7	23.1
Savannah, Ga.	1,722	1,744	1,721	26.4	25.7	25.2
Chicago, Ill.*	24,368	51,993	51,703	11.1	21.7	21.1
Quincy	879	849	1,000	24.0	23.1	27.2
East Chicago, Ind.	422	1,215	1,145	21.7	47.1	42.1
Fort Wayne	978	1,749	1,564	15.2	24.2	21.0
Hammond	415	824	820	19.7	33.7	32.4
Indianapolis	4,683	5,664	5,417	19.9	21.8	20.4
Logansport	387	406	439	20.3	20.0	21.2
South Bend	1,665	1,906	1,796	30.8	29.3	26.8
Baltimore, Md.	9,858	12,637	13,634	17.6	21.8	23.3
Cumberland	537	709	711	24.5	29.7	27.8
Adams Town, Mass.	431	484	438	33.0	35.0	31.2
Attleborough Town	426	490	489	26.1	26.8	26.0
Boston	17,670	19,462	19,655	25.7	26.5	26.4
Chicopee	912	1,208	1,207	35.7	43.1	42.7
Haverhill	1,050	1,169	1,214	23.7	24.8	25.4
Lowell	2,650	2,934	2,964	24.9	26.4	26.4
Lynn	2,403	2,186	2,220	26.8	22.3	22.1
Melrose	312	333	354	19.8	19.7	20.6
New Bedford	3,973	3,731	3,673	40.8	33.5	32.0
Newburyport	321	334	367	21.5	22.1	24.2
Newton	826	870	903	20.7	20.5	21.0
Peabody Town	406	529	588	25.7	30.2	32.8
Quincy	949	1,083	1,075	28.9	29.8	28.9
Revere Town	462	714	772	25.1	33.1	34.6
Salem	1,260	1,187	1,046	28.7	25.3	21.9

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APPENDIX A—Continued

City	No. of Births 1910	1914	1915	Birth Rate per 1,000 Population 1910	1914	1915
Springfield	2,656	3,226	3,375	29.7	32.1	32.7
Wakefield	276	330	325	24.1	26.8	26.0
Watertown Town	385	481	500	29.7	33.8	34.4
Webster Town	404	414	362	34.9	32.7	28.0
Winthrop Town	181	232	218	17.7	19.6	17.8
Woburn	351	360	369	22.9	22.8	23.3
Worcester	4,060	4,855	4,691	27.7	30.8	29.2
Alpena, Mich.	237	254	215	18.6	19.4	16.3
Detroit	11,509	19,164	20,917	24.5	35.6	37.7
Grand Rapids	2,788	3,205	3,281	24.7	26.0	26.1
Ironwood	478	502	522	37.1	35.5	36.1
Kalamazoo	805	1,022	910	20.2	22.3	19.2
Muskegon	617	716	780	25.6	28.1	30.3
Pontiac	284	453	402	19.4	27.4	23.6
Sault Ste. Marie	353	430	359	27.9	31.9	26.2
Duluth, Minn.	1,877	2,080	2,170	23.8	23.3	23.6
Minneapolis	5,985	7,889	7,813	19.7	23.0	22.1
St. Paul	3,964	5,195	5,290	18.4	21.9	21.9
Virginia	376	550	488	35.4	40.2	33.8
St. Louis, Mo. §	15,663	15,306	15,018	22.7	20.8	20.1
Helena, Mont.	304	383	334	24.2	28.9	24.9
Missoula	242	321	281	18.5	19.5	16.2
Lincoln, Neb.	1,034	1,207	1,169	23.4	26.4	25.4
Berlin, N. H.	470	465	466	39.7	35.7	35.0
Concord	399	402	409	18.5	18.0	18.2
Dover	316	242	314	23.9	18.2	23.7
Laconia	225	270	271	22.0	24.3	24.0
Manchester	2,029	2,242	2,370	28.8	29.6	30.8
Nashua	677	707	719	26.0	26.3	26.5
Asbury Park, N. J.	210	190	222	20.4	14.9	16.6
Bayonne	1,745	2,064	2,287	31.1	31.6	33.8
Camden	1,958	2,444	2,484	20.6	23.9	23.8
East Orange	582	569	784	16.8	14.3	19.0
Elizabeth	1,540	2,196	2,109	20.9	26.6	24.9
Jersey City	4,567	7,258	7,085	17.0	24.7	23.6
Kearney	365	442	486	19.4	20.1	21.4
Montclair	436	491	523	20.1	19.8	20.5
Morristown, N. J.	250	258	271	19.9	19.8	20.6
Newark	10,289	11,478	11,248	29.4	29.5	28.2
Orange	788	796	791	26.5	24.9	24.3
Passaic	2,040	2,048	1,988	36.9	30.9	28.8
Plainfield	497	569	644	24.1	25.0	27.7
Trenton	1,538	3,327	3,059	15.8	31.1	28.0
West New York	342	597	638	24.9	34.9	35.6
Buffalo, N. Y.	10,008	12,612	12,683	23.5	27.8	27.5
Cortland	265	228	295	22.9	18.1	23.0
Dunkirk	583	569	522	33.6	29.0	25.9
Hornell	227	295	288	16.6	20.6	19.8
Hudson	254	289	377	22.2	23.6	30.1
Little Falls	352	429	488	28.6	32.8	36.8
New York	129,080	140,647	141,256	26.9	26.4	25.8
Niagara Falls	879	1,517	1,434	28.7	43.2	39.6
North Tonawanda	363	419	406	30.2	31.8	30.1
Plattsburg	219	239	227	19.6	19.4	18.1
Saratoga Springs	222	254	266	17.5	19.8	19.3
Schenectady	2,172	2,361	2,165	29.5	26.1	22.7
Syracuse	2,870	3,415	3,579	20.8	22.9	23.5
White Plains	366	545	520	22.7	28.1	25.8
Yonkers	2,107	2,543	2,461	26.2	27.2	25.5
Raleigh, N. C.	463	604	556	24.1	30.5	27.8
Canton, Ohio	1,123	1,278	1,491	22.2	22.3	25.2
Cincinnati	7,263	8,080	7,803	19.9	20.1	19.2
Columbus	3,280	3,837	3,896	18.0	18.8	18.6
Dayton	2,637	2,950	2,697	22.6	23.8	21.5
Massillon	285	278	299	20.5	18.6	19.8
Middletown	306	558	602	23.1	37.6	39.5
Norwood	268	316	247	16.4	15.6	11.6
Sandusky	395	425	418	19.8	21.0	20.7
Toledo	3,542	4,460	4,551	20.9	24.2	24.2
Youngstown	1,694	2,109	2,558	21.2	22.6	24.5
Altoona, Penn.	1,410	1,599	1,525	26.9	28.3	26.5

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APPENDIX A—Continued

City	No. of Births 1910	1914	1915	Birth Rate per 1,000 population 1910	1914	1915
Carbondale	479	467	446	28.0	25.2	23.6
Erie	1,791	2,300	2,090	26.8	31.8	28.3
Harrisburg	1,634	1,442	1,352	25.4	20.8	19.1
Norristown	571	665	672	20.4	22.0	21.8
Philadelphia	38,676	41,063	40,849	24.9	24.8	24.3
Pittsburgh	15,197	16,328	16,139	28.4	28.9	28.2
Reading	2,496	2,670	2,511	25.9	25.8	23.3
Sunbury	328	377	335	23.7	24.4	21.1
Warren †	230	269	297	20.6	19.2	20.6
Pawtucket, R. I.	1,183	1,278	1,419	22.8	22.5	24.4
Providence	5,727	6,098	5,833	25.4	24.9	23.3
Nashville, Tenn.	1,669	2,369	2,095	15.1	20.6	18.1
Galveston, Tex.	685	911	940	18.4	22.6	22.9
Ogden, Utah	258	880	779	10.0	29.8	25.6
Barre, Vt.	247	285	275	22.9	24.3	23.0
Rutland	258	302	322	19.0	20.9	22.0
Richmond, Va.	2,734	3,155	3,473	21.4	23.4	22.5
Seattle, Wash.	4,220	4,905	4,953	17.5	15.7	15.0
Tacoma	1,517	1,546	1,487	17.9	14.9	13.8
Wheeling, W. Va.	634	830	840	15.2	19.4	19.5
Beloit, Wis.	353	415	408	23.2	24.2	23.2
Fond du Lac	431	438	458	22.8	21.5	22.1
Janesville	274	285	287	19.7	20.1	20.1
La Crosse	629	720	621	20.7	23.0	19.7
Madison	217	757	673	8.5	25.7	22.4
Manitowoc	324	296	373	24.8	21.8	27.3
Milwaukee	9,797	11,929	11,278	26.1	28.6	26.3
Oshkosh	750	820	794	22.6	23.4	22.3
Racine	964	1,258	1,350	25.2	28.3	29.7
Superior	719	868	780	17.7	19.6	17.2
Total Cities	466,894	563,678	564,518	22.6	24.7	24.2

* The number of registered births in Chicago is estimated as 95 per cent. of the returns from Cook County. (See Bulletin 112 of Bureau of the Census, Mortality Statistics for 1911, p. 24, footnote 4.)

§ April to April.

† Stillbirths included.

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THE WORK OF GOVERNMENTAL AUTHORITIES FOR THE CONTROL AND PREVENTION OF INFANTILE PARALYSIS

STATEMENT BY THE CHAIRMAN:

The acute problem before the government and people today in relation to infant welfare is a problem of the prevention of infantile paralysis. Our attention has been recently drawn to the fact that more children die from diphtheria and scarlet fever it may be, year in and year out, than are now dying from infantile paralysis; and the deduction is sought to be drawn that we are paying too much attention to infantile paralysis; as though a man suffering from a chronic disease should ignore a minor incident, such as a broken bone or a dislocated joint until he is cured of cancer or arterio-sclerosis.

The logical demand on the community today is not to ignore scarlet fever, or diphtheria, or measles, or whooping cough, or infantile paralysis, but to attack them all.

Infantile paralysis has been attacked by the Federal Government, and this seems to be an opportune time for determining how far we have moved in the line of prevention. Probably the most important element in preventing the spread of infantile paralysis is the control of the disease so as to confine it within a limited area, if it be possible. To confine it within a limited area in the state is a state function, to confine it within the area of a particular state or territory is a federal function, which the United States Public Health Service backed up by a modest appropriation by Congress, sought to discharge. Through the courtesy of Surgeon General Blue, of the Public Health Service, we have two of the officers who were actively engaged in the effort to control infantile paralysis at the very center of the outbreak of last summer, that is, in the territory about New York City and in the city itself. They will tell us what the Public Health Service has done and will do to endeavor to relieve this country of the present panic — and it is neither more nor less than a panic.

I take pleasure in introducing Dr. Charles E. Banks, Senior Surgeon, United States Public Health Service, Milwaukee, Wis.

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GOVERNMENT MEASURES TO PREVENT SPREAD OF POLIOMYELITIS

Epidemic of 1916 in New York City

CHARLES E. BANKS, Senior Surgeon, U. S. Public Health Service, in Charge of Detail

During the summer of the present year the greatest epidemic of poliomyelitis known to the present generation, or at least of record for professional study, occurred in the municipality of Greater New York, and extended for a radius of one hundred miles in every direction from the first development at this focus, until there was a total of approximately 19,000 cases. Of this number about 9,000 occurred within the five boroughs of Greater New York. The remainder of these cases were to be found in Northern New Jersey, Western Long Island in the southern tier of counties in New York State, and in Western Connecticut, affording an excellent example of the spread of this disease by propinquity and contact.

This epidemic began late in May, grew to considerable proportions in the month of June, and by the middle of July had reached an incidence of 120 cases daily. The highest daily record was 217 cases on August 3, 1916. This was the crest of the wave, and from that time forward until the first of October the subsidence was continual, and consistently rapid.

The steady increase in the numerical strength of this epidemic alarmed communities in centers of population all over the country, and as a consequence there were demands for restrictive measures running all the way from inspection of travelers from New York City, to shotgun quarantine. The Surgeon-General was frequently importuned for assistance in controlling its spread.

The Secretary of the Treasury who, under the law, has supervision of the activities of the United States Public Health Service, early in July offered the Mayor of New York City the co-operation of the medical officers of this corps in the execution of any measures which would be of local assistance in the management of the epidemic, or would tend to prevent the spread of the disease to other communities. This offer was accepted, and the Service Board in Washington considered the

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situation with a view to applying such measures under the Interstate Quarantine Law as seemed to be applicable to the situation; in addition a field party was detailed with headquarters in New York City, to co-operate with the local health authorities in a limited epidemiological study under charge of Surgeon C. H. Lavinder. This phase of government work will be related by others.

On July 13 I was summoned by telegraph to Washington to a conference on this situation and after arrival was detailed as chief of the party which should be chosen to carry out measures tending to the prevention of the spread of the epidemic. Upon arrival in New York City on the morning of July 15, after making a careful examination of the situation in regard to the questions of quarantine and restrictions of travel for safeguarding other states, being assured of the co-operation of the Health Commissioner of the City of New York, and requiring of the transportation managers of the great railroad and steamboat systems entering into New York City their aid in executing the plan which was obligatory on them under the Interstate Quarantine Act of February 15, 1893, the following plan of operation was devised:

First it was determined that children 16 years of age or under should be put in a restricted class of travel, and that whenever such children were to be taken out of New York City, by rail, boat or other means, their parent, or guardian, must first obtain a certificate that the premises occupied by them were free from and had been free from poliomyelitis since January 1, 1916, and that this certificate must be obtained on the day of travel, or at the farthest it should not be over twenty-four (24) hours old at the time of entraining or embarking.

Second. Medical inspection of such travel was to be maintained at every avenue of exit from New York City by rail or boat, exclusive of a few trolley lines. Automobile traffic was equally guarded by the same means with the exception of a few roads at the extreme northerly limit of the Borough of the Bronx leading into New York State, and thence, by connecting highways to Connecticut and Massachusetts.

The examination of this vast volume of travel was accomplished at twenty (20) different stations and took place under the personal supervision of thirty-six (36) medical officers. This examination consisted of as careful and accurate inspection of each child as the rapidity of movement of travel and the exigencies of the situation permitted. Naturally, there could be no elaborate clinical observations taken.

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It is to be presumed that few, if any persons, except under great stress would attempt to move a child in the acute stage of poliomyelitis from a city where every facility under their family physician was afforded for treatment, to outside towns where conditions were less favorable for care of the sick.

The number of actual rejections for suspected poliomyelitis was small, but as an example of the work, one of our surgeons told me of such a rejection and the removal of the child to the City Hospital immediately, and four days later the father passing through the same depot informed the officer that his child had died that day of the disease.

The City Board of Health in its work of certification of premises rejected about five hundred (500) applications for certificates of freedom of such premises from this disease.

Third. As a part of this system of restriction of travel, all railroad and steamboat lines were required, under my directions, to refuse entrance through their gates to all children under 16 years of age leaving New York City whenever the travelers were not provided with certificates of identification issued by the officers of the United States Public Health Service, and all such persons presenting themselves for passage were denied entrance until they had so provided themselves. This constituted a very efficient check on unauthorized travel, and from personal observation of its administration at all hours of the day and night, I am satisfied that but few sifted through the net.

Fourth. The card of identification issued by our officers enabled the traveler to pass the gateman and enter upon his journey. At the same time it was punched as a ticket would be to prevent subsequent use by others.

A duplicate of this card was immediately mailed to the health officer of the locality to which the traveler was destined, informing the officer of the expected arrival of the traveler, giving the street and house address in the town or city to which he was bound, and the number of children 16 years of age or under accompanying him. These were mailed hourly by railway postal trains and reached the health officials a short time after the arrival of the travelers.

A complication in the supervision of the vast volume of travel in and out of the city of New York, estimated at over a million people a day, was the problem of commuters, 16 years of age, or under; office

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boys and girls, workers in stores, factories, shops, etc., living in New Jersey or Connecticut and having employment in the city. This was cared for by the issuance of commuters identification cards, based on information similar to that required for interstate travel as to the freedom of their premises from this disease, but with the provisions that these cards should be renewed every week under like conditions of immunity.

It will thus be apparent that the measure adopted by the United States Public Health Service was a frank inspection and notification system, and nothing else. A quarantine of New York City was not only impracticable, but undesirable and unadvisable under the circumstances. That the system had the effect of restricting travel from uncertified premises, and children in a doubtful state of health is established by the experience of the medical inspectors, and records of the work.

Indirectly, the travel and congregation of children for the customary week-end excursions at the beaches, was discouraged. As this was mostly interstate travel, mixed with interstate traffic, it could be done only through the co-operation of the boards of health of the adjoining states, and the transportation companies. Certification of such travel was absolutely refused by me on the ground that it tended to spread the disease by contact of persons from infected localities with persons from uninfected localities. Baby parades at Asbury Park, Atlantic City and other shore resorts, and similar congregations of children for like purposes at fairs and yearly celebrations of various sorts were effectively stopped through notification to the respective managers of such affairs, and the great annual volksfest of the United German Societies of New York, held annually in Bergen, New Jersey, was also stopped as far as the participation of children was concerned, by the application of the same restrictive methods. It is estimated that 10,000 children annually attend this latter national gathering.

Arriving on the scene after the epidemic had reached a total of 2,000 cases of infantile paralysis, and with summer travel already begun and in operation for several weeks, it will be understood that thousands of children had already left the infected area and had been distributed in hundreds of places in New York, New England, New Jersey and Pennsylvania. As a consequence of this early and unrestricted movement of children, various portions of Connecticut insti-

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tuted quarantines of varying rigidity, and this was followed by similar action on the part of towns in New York State and New Jersey. The State of Pennsylvania adopted stringent quarantine measures effective August 4, and on August 15 New Jersey required the restriction of all travel of children 16 years of age or under, between towns in the state. The State of Virginia adopted the most repressive quarantine measure, denying admission to any child into the state, but illogically excepting residents of that state from its operation; and some communities in the middle and far west maintained a system of travel inspection.

The objects achieved, from the standpoint of those engaged in this work in New York City, may be stated as warranting the following conclusions:

First. The stabilization of public opinion through the presence of regular officers of the United States Public Health Service, trained in the management of epidemics, who were assigned to duty in New York City. This was crystalized through the uniform approval of the metropolitan press, with its continuous favorable references to the work accomplished.

Second. The standardization of methods adopted by local quarantine officers of other states through co-operation with the plan of certification above described. Harsh restrictive measures had been adopted in many localities because of the absence of knowledge of the extent of the epidemic, and lack of information of the origin of travel into their communities.

Third. The certification of such travel, as being reasonably safe, after medical examination, which outside communities were willing to honor because issued by trained federal officers not subject to local interests. It afforded the local health authorities a certain security in locating arrivals in their jurisdiction immediately, and instituting such measures of isolation, or limitation of movements for a given period as they deemed wise.

Finally. A demonstration of the need of a centralized authority, with power to deal with interstate problems relating to the transmission of disease by common carriers, backed by Congressional statute. The Quarantine Law of February 15, 1893, was the keynote to the administration of the work of the officers of the United States Public Health Service in the measure employed by it of certification, and notification to health officers of travel to their localities.

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From the standpoint of the states outside of the zone of immediate contact, the proof of the efficiency of the work should be found in the record of any cases in distant communities which could be traced to travel certified by our officers as origination in New York City.

As this meeting is held in Wisconsin, it is perhaps typical to take this state as an example with its cities and towns to which travel was certified from July 18 to September 30, inclusive.

Of the 85,000 children certified to every state in the Union, covering nearly four thousand separate localities, our records show 105 children certified to Wisconsin, destined to 19 different localities. Inquiry was made of the health officers of all these localities, which included the city of Milwaukee, and the uniform reply was that there had either been no case of poliomyelitis, or if such had occurred, that it in no way could be connected with travel from New York City.

As an example from a distant section of the country, the State Health Officer of Florida informed me that none of the cases which appeared in his state could in any way be traced to travel certified by us from New York City. I also addressed health officers of two localities in each of twenty different states, picked at random, including localities ranging from the smallest towns to cities the size of New Orleans, and in over fifty (50) replies which I have received I was informed that wherever cases had occurred they were in no way traceable to New York travel.

The city of Holyoke, Massachusetts, is perhaps a typical example of the conditions incident to the spread of the disease this summer through certified and uncertified travel. This city became badly infected, relatively speaking, and a house to house inspection was undertaken to locate the families arriving there from New York prior to the institution of our inspection and a considerable number of the cases which appeared in Holyoke could be traced to that source. After July 18 twenty-six families were certified by us to that city and were placed under quarantine observation. No case occurring in the city could be traced directly to these twenty-six units, or for that matter, no case that developed in close proximity to their residences. These facts are based on a sanitary survey of Holyoke in relation to epidemic poliomyelitis, made by a responsible official.

I give these facts for what they are worth. With our lack of knowledge as to the method of transmission of the disease, whether by

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adult or child carriers, or by other means, the claim can be as readily made that the measures instituted and carried out by the United States Public Health Service did effectually prevent the spread of the disease through interstate travel. These hundred localities selected at random from all over the United States, point to that conclusion, certainly. If poliomyelitis had been found in these localities traceable to New York travel, after July 18, it could as readily be claimed that the plan had been a failure.

The Chairman: The quarantine game is something like a game of checkers. We make our move, the germ makes its move, and so it goes. The skill with which we humans make our moves depends on our knowledge of the probable moves of the germ, and if we are to play the game well we must study the methods habitually followed by the germ that is responsible for the outbreak. So while Dr. Banks has been busy making the moves designed to checkmate and block the virus, Dr. Frost has been studying the habits of the disease so as to assist by giving us some knowledge of the probable moves the virus is going to make.

It gives me pleasure to introduce Dr. Wade H. Frost, Passed Assistant Surgeon, U. S. Public Health Service, Washington, who will tell us something of epidemiologic studies of infantile paralysis.

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THE ACTIVITIES OF THE UNITED STATES PUBLIC HEALTH SERVICE IN EPIDEMIOLOGIC STUDIES OF INFANTILE PARALYSIS

WADE H. FROST, M. D., Passed Asst. Surg., U. S. Public Health Service, Cincinnati

A well balanced estimate of the public health importance of almost any infectious disease and effective methods of control are usually based on knowledge derived from different angles of study; primarily from clinical study showing the nature of the manifestations of the disease, often from experimental work, giving knowledge of the specific organism and pathogenesis; almost invariably in addition to these, from epidemiologic studies. The term "epidemiologic study" as used here is intended to mean not merely studies of epidemic outbreaks but also of the circumstances and conditions governing the usual occurrence of the disease in nature, such circumstances as the relation of cases to each other and to various environmental conditions.

The relative importance of these various angles of study differs in different diseases. Regarding certain common infectious diseases, such as measles, scarlet fever and smallpox, we have arrived at our present conception of their etiology without material aid from experimental studies. In certain other diseases notably yellow fever, malaria and bubonic plague, the results of experimental studies have completely revolutionized previous conceptions regarding etiology and prevention.

The field of epidemiologic study is peculiarly one for governmental agencies, federal, state and municipal, because the primary data necessary for such studies, namely, morbidity reports, can best be obtained through the agency of the constituted public health authorities. This is not so in clinical or experimental studies which consequently have been developed largely by research institutions and individuals, not connected with the organized public health authorities.

Before undertaking to give a review of the studies undertaken by the Public Health Service in connection with the poliomyelitis epidemic of this year, it may be well to review briefly what had been done in this field in previous years.

Prior to the Swedish epidemic of 1905 no co-ordinated records of poliomyelitis were available, because there had been nothing more than

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occasional scattered outbreaks upon which to base epidemiologic studies. In 1905 there occurred in Sweden an epidemic of about 1,000 cases, and at this time the disease was made reportable in that country by royal edict, and Dr. Ivar Wickman was appointed to study the epidemic as a whole. His monograph, reporting the result of his study, stands as a classic, an authority on poliomyelitis in its clinical pathological and epidemiological phases. Though abundantly confirmed by later studies, his work has in many respects not been improved upon.

The next opportunity to obtain broad statistics on poliomyelitis was presented in 1907 when there occurred in and around New York City an epidemic totaling about 2,500 cases. Of that outbreak, however, no official record is in existence, because at that time the disease was not required to be reported to the health authorities and consequently no current official records were kept. A clinical and epidemiologic study of this epidemic was, however, taken up by the New York Neurological Society, the epidemiologic section of their report having been compiled by Dr. Bolduan of the New York City Health Department. The records of this study cover approximately 900 cases and are fairly satisfactory. They are notable as constituting the first statistics of their kind available in regard to the epidemiology of poliomyelitis.

As regards the spread of that epidemic from the New York focus, little is known except that it did spread within a limited territory, mostly north and east. In Massachusetts alone of all the states attacked in 1907, the State Board of Health recognized the public health problem involved and instituted a definite, orderly program of epidemiologic study, and made an attempt, in which I believe they succeeded, to obtain an epidemiologic record of every case of which they could obtain a report. This program of study has been continued in Massachusetts each year since 1907, so that Massachusetts is now the only territory in this country, I believe the only area in the world, in which there is a fairly complete epidemiologic record of all cases of poliomyelitis occurring in a period of nine years. These Massachusetts records are conseequently a most valuable item in our present knowledge of the disease.

It was only in 1910, when the epidemic prevalence of poliomyelitis in the United States, added to the stimulus of rapidly progressing experimental work, attracted serious attention to this disease, that epidemiologic studies were taken up seriously. In that year outbreaks

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occurred in many sections of the northern portion of the United States. Experiments had by that time showed that the infection was due to a specific microorganism; morbidity reports were required, more or less stringent quarantine regulations were passed, and in almost every state where the disease was unusually prevalent, some attempt was made to study it carefully. Especially careful and valuable studies were made during that year in Massachusetts, Pennsylvania, Connecticut, Iowa and Washington State. At this time the Federal Government first started to work upon the problem, taking up first an epidemiologic study in Iowa, next the collection, compilation and publication of morbidity statistics from various states, a compilation which has been continued annually since 1910.

It may perhaps be beyond the scope of this discussion to undertake an account of studies of poliomyelitis prior to this year and their significance, but I will digress to summarize briefly the essentials of our knowledge concerning this disease before the outbreak of this year.

From experimental studies the essential facts learned were: that poliomyelitis is due to a specific microorganism, apparently a filterable virus, not belonging to the class of bacteria but to some less well known class. This organism appears to be capable of cultivation upon artificial media, but not definitely recognizable except by innoculation of monkeys. It has been found present not only in the nervous tissues and other organs of infected persons, but in the secretions of the respiratory tract and the intestines. Moreover, the virus has been demonstrated in the secretions of persons convalescent from acute attacks of poliomyelitis, and in a few instances in the secretions of apparently healthy persons who have merely been in contact with poliomyelitis cases, that is, virus carriers. Add to this the fact that monkeys, the only animals constantly susceptible to poliomyelitis, may be infected by application of the virus to the nasal mucous membrane, and we have a fairly complete chain of evidence that poliomyelitis is a directly transmissible disease.

It must be said, however, that but for this experimental evidence, we would have little upon which to base an opinion that the disease is directly transmissible, because epidemiologic observations appear at least superficially not to be in accord with this conception.

Summarizing briefly the salient facts established regarding the epidemiology of poliomyelitis:

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The disease is known to be endemic in practically all the territory covered by reliable records, but its recognized endemic incidence is extremely small.

Epidemics of greater or less size have occurred in practically all parts of the world, most frequently in the northern latitudes of the North Temperate Zone.

A definite seasonal prevalence, reaching its maximum in summer and fall, declining in winter, has been well established.

From the numerous small outbreaks studied intensively, various facts have been ascertained, more or less contradictory in some respects, but agreeing generally in these broad characteristics:

The incidence of the disease, even in severe epidemics, is always limited, seldom reaching a figure of more than one to five cases per thousand in any considerable population.

The disease is mostly confined to children in the first decade of life, more especially those under the age of six. The proportion of adults attacked is usually extremely small.

Areas in which an epidemic has occurred are usually not visited by a recurrence for a period of several years.

Notwithstanding the closest study, it has usually been impossible to trace definite contact between cases in any considerable proportion of those infected. Ordinarily contact with a previous case cannot be established in more than ten to twenty per cent of cases investigated, the remaining eighty or ninety per cent of the cases occurring with no evidence of such contact.

Infection of water supplies, milk supplies and general food supplies has usually been eliminated as an important agency in the spread of this disease.

No special environmental conditions have been found essential to the occurrence of poliomyelitis.

These facts have led to this point of view, that if we accept the indications of experimental work that poliomyelitis is solely a human disease, directly transmissible from person to person, we must almost inevitably accept the view that the vast majority of people are insusceptible to the infection, practically all adults being immune; and that there must be numerous sources of infection other than the recognized cases. However, there are many competent observers and students who do not accept the experimental evidence as conclusive, and who think

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it probable that poliomyelitis is not transmitted directly from person to person but may be conveyed through the agency of some insect carriers, or that it is essentially a disease of some of the lower animals.

When the outbreak of this year first developed in New York City it was readily recognizable as being unprecedented in point of size, and thus marking an era in the history of poliomyelitis. Whether this great epidemic should prove to have marked the crest of a pandemic wave, or merely another step in a progressive increase in prevalence, it was from the first evident that it would mark an important stage in the history of the disease and that it was important to obtain as complete a record as possible of this epidemic. The Public Health Service recognized, therefore, not only an opportunity but also an obligation to assist in collecting and correlating the data necessary for such a history. It was, of course, assured that the epidemic would be carefully and skillfully studied in their respective jurisdictions by the public health authorities of New York City and of such states as might be affected, and that the work of the Public Health Service would be therefore chiefly that of correlating and perhaps supplementing these studies.

Early in July Surgeon C. H. Lavinder was detailed to direct a comprehensive epidemiologic study in co-operation with the health authorities of New York City and various states, and a staff of about twelve medical officers was assigned under his direction. Through the courtesy of Dr. Emerson, Commissioner of Health of New York City, Dr. Lavinder was given full access to all the mass of data collected by the health department, including the records of individual cases. Moreover a section of New York City, the Borough of Richmond, was assigned to the Public Health Service as a field in which to make an intensive study, all cases in this area to be visited and investigated by service officers.

However, it was considered that perhaps the most important field for study by the Public Health Service was in the territory outside of New York City, in adjacent states, likely to be affected by the epidemic; that it was of importance to correlate the data collected by these various state agencies. Accordingly suggestions were made to the state health authorities of New Jersey, Connecticut, Rhode Island and Massachusetts, relative to the adoption of uniform methods of conducting studies so that their data might ultimately be in common terms, capa-

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ble of being put together into a comprehensive report. The favor was also asked of receiving from these several state authorities weekly reports of cases reported to them, also the opportunity of taking up in each of the states such intensive studies as might appear to be practicable. In these intensive studies it was desired especially to investigate a number of the early isolated cases occurring on the fringe of the epidemic area to determine their relations to the New York focus, and in addition to make complete studies of all cases in several rural areas. These opportunities for special study and co-operation in all respects suggested were most courteously granted by the authorities of all states visited.

As the results of these studies have not yet been fully analyzed, it would be premature to undertake any conclusions, and I can at this time mention only a few outstanding features of this recent epidemic.

The epidemic showed a very definite picture of progressive, radial spread from New York, a spread limited to a radius of approximately two to three hundred miles, extending south through Pennsylvania to Maryland, north and east through practically the whole of New England, and west through New York State.

Going out from New York City, in successive distance zones the development of the epidemic was found to have been progressively later, and the incidence in proportion to population less. In other words, the epidemic was earliest and most intense at the center, later and less intense in the more distant areas. Intensive studies of selected areas in New York City and in several states developed no essentially new facts, nothing essentially different from what had been previously ascertained in the study of other epidemics. The whole study has resulted so far in no radical discovery, but this was expected. It was recognized from the outset that such a study was unlikely to result in a definite discovery, but was certain to result in the accumulation of statistical data, which will undoubtedly increase our general knowledge of this disease.

As to future work on the part of the Public Health Service, I can make no predictions, except that in all probability the service will continue its activities in correlating the data collected by various state and city agencies, piecing out the fragmentary picture which we now have of the epidemiologic aspects of this very baffling disease.

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The Chairman: The trouble with most of our contagious diseases, with most of our diseases, is the problem of death. It is the possibility of death that strikes terror to the hearts of the father or mother, when his child is taken ill in most diseases. But with respect to this particular disease, death seems almost a minor peril; and it is the possibility of terrible after-effects that causes the panic. You will hear many mothers say today they would rather have had their children die than to live as some have lived, piteously paralyzed. Those of you who have among your acquaintance mothers whose children were paralyzed three, four, five, six years ago, and certainly the medical men present, realize how pathetically the mother today, or the father tomorrow, relate some trifling apparent variation in the ability of the child to move the paralyzed part, in the vain hope that improvement has set in. In the present outbreak of infantile paralysis, we have the best possible illustration of co-ordinated effort to provide for after care so as to mitigate the ravages of the disease, where they could not be prevented. Everywhere the plan has been adopted, or is being adopted, of some organized movement to relieve the future distress of the victims.

One of our members has lived in the particular community in this country that has been worse stricken by infantile paralysis than any other. We hear more of New York City because the actual number of cases is larger, and because it is always in the mind of people, but it is Newark, N. J., that has suffered most of all from the onslaught of this disease.

Dr. Coit will read a brief report prepared by Dr. Craster, Health Officer of Newark, on Administrative Control of Poliomyelitis in that city in 1916, and will then tell us something of the movement organized in Newark for the after-care of the victims of the disease.

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*ADMINISTRATIVE CONTROL OF POLIOMYELITIS IN NEWARK 1916

CHARLES V. CRASTER, M. D., Health Officer, Newark, N. J.

The researches of Flexner upon the transmissibility of the human virus of poliomyelitis on monkeys and the further confirmatory work of Rosenau and Anderson sufficiently proved to epidemiologists the probability of the spread of infantile paralysis by personal contact, as well as the necessity of its classification as a communicable disease. The method of its spread was not made clear, the observations of Wickman in Sweden upon the rôle of schools in this respect had not been confirmed by later observers.

When poliomyelitis became epidemic in New York at the end of May and in June, 1916, it was evident that the virus had considerable power of transmission seeing that all the five boroughs of the city quickly became infected.

Some anticipation of the spread of the disease to nearby cities enabled a plan of campaign to be evolved so that when the first case of this particularly virulent form of disease was reported in Newark, we had some of our administrative machinery already in working order.

The first step taken was to call a special meeting of the Board at which the following resolutions were passed:

Poliomyelitis was defined as a contagious communicable disease.

Placarding of all infected houses upon all public entrances.

A quarantine period six weeks required for the family, from date of reporting of disease.

Complete isolation of the patient, this meaning a separate room and attendant who was to do nothing else and who must be isolated with the patient.

After the quarantine period had ended a terminal disinfection by formaline vapor fumigation followed by a mechanical cleansing of all infected premises.

It was found, however, in the course of the epidemic that provided that proper isolation of the case was carried out in the house, it was not practicable or necessary to quarantine the wage-earner. Where isolation measures were impossible or defective, or difficult to carry out, or could not be depended upon, the patient was required upon the order of the health officer, to be removed to an isolation hospital.

* Read by Dr. H. L. Coit.

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The hospitalization of cases was the central idea of our efforts to control the epidemic and we were successful in obtaining the hospital treatment of between 50 and 60 per cent of all cases.

Where there was a nursing baby a different procedure was attempted where isolation methods were not properly carried out. In such cases the wage earner was quarantined with the family, the employer being also informed that the methods obtaining at the home were such as to be a cause of danger to his fellow workers. Even the threat of such a procedure by the Board of Health in most cases accomplished the desired results, and invariably successful isolation was enforced.

All cases of poliomyelitis treated at home were placarded for the full quarantine period of six weeks. By a special ordinance passed by the Board it was required that where a case died or was removed to hospital and after the terminal disinfection and fumigation a further period of quarantine of two weeks should be enforced where other children remained in the family, during which period the placard remained on the house.

The purpose of this was to allow the development of any further cases in the family and to keep such developmental period under observation of the visiting sanitary inspectors. The period of incubation of the disease presumably being according to the best authorities between seven and ten days.

When only adults were in the family no further placarding or period was required after removal or death of the patient.

The placarding of houses was found to have its problems in the two and three-family house, and the tenement houses. To quarantine every person in a building the majority of whom were total strangers to each other was found to be a hardship. A compromise was effected, by quarantining only the family in the affected apartment. Families in different apartments were allowed full liberty provided that they did not have any communication with the family under quarantine.

This special privilege regarding other families in placarded houses did not apply where a family or person desired to move out. No permission to remove household goods was given and no furniture was allowed to be removed to or from a quarantined building. Should any person leave the placarded building without the consent of the

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Board such a family was quarantined at the new address for a period of two weeks.

The number of cases in Newark increased to such an extent that the accommodations at the County Isolation Hospital which treats the communicable diseases of the county including Newark city soon became filled up and we were considerably exercised as to how an extension for the purpose of proper accommodation of patients could be provided for those who could be persuaded to accept hospital treatment. It happened, however, that a large wing of the City Hospital had been recently rebuilt and was waiting for the proper furniture to be installed at the time of our epidemic. The consent of the city administration was obtained to use this rebuilt wing for poliomyelitis cases and it was quickly furnished with children's cots and an increased staff of nurses provided. This contagious disease accommodation in a general hospital was made possible by a strict division of the staff who were employed in nursing and other duties of the wards, and worked exceedingly well. As far as we know, no child in any other ward of the hospital contracted the disease.

I may say that from July 3rd when the first of our cases occurred to the end of September when the epidemic had nearly exhausted itself, we had altogether 1,360 cases and 363 deaths, a mortality of 26.7 per cent.

It is interesting to note that 86 per cent of all cases and 80 per cent of all deaths were under five years of age. The administrative measures concerning the control of the disease included the request that all summer, all-the-year-round schools should be closed. This request was acceded to by the Board of Education in a modified manner by excluding only children of those grades in which the children were of 12 years old and under. The Board of Health deemed it advisable to close all Sunday schools, play grounds and schools and such other places as public parks, and obtained the active co-operation of the police and other departments of the city in preventing the congregation of children in large bodies, such as picnics, outings and other occasions for public amusement. All children under sixteen years of age were forbidden to attend moving pictures, open air shows, parks, theatres and other places of amusement. Day nurseries were ordered closed as were also the children's clinics and dispensaries throughout the city.

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When in the early days of the epidemic the State Board of Health of New Jersey required the issuance of a health certificate for all children under 16 years of age coming into the State of New Jersey or passing from one municipality to another, these state requirements were rigidly enforced and many thousands of such certificates were issued by the Newark Board of Health to families coming into and leaving the city on vacation or other purposes. The Board of Health's method of issuing such certificates was to require of the applicant a physician's certificate stating that the children of the family at that time were free from symptoms of poliomyelitis. Upon submitting the certificate to the Board, the address given was looked up and if no poliomyelitis cases had been reported from that address a clean bill of health was issued.

It is a question whether such bills of health are of very particular value in these epidemics for the reason that it is impossible to diagnose poliomyelitis in the incubating stage. Several cases came to our notice in which children with clean bills of health from Newark subsequently developed poliomyelitis within a day or two after arrival at their destination outside of the city. Persons with children coming into the city without certificates were quarantined for a period of two weeks. The activities of the Department included the printing and distribution of many thousands of circulars printed in English, German, Italian, Polish, Yiddish, in which the public was informed as to the danger of infection and the necessity of remaining away from placarded and quarantined houses. The public press was of assistance to us in the publication of the necessary instructions and advice to people during the epidemic period and in giving the full name and address of each case of poliomyelitis reported to the Board.

It was thought that the return of children from the seashores to the city in September might produce a recrudescence of the disease among the susceptible children so returned. For this reason the Board of Education was asked by the Board of Health to put off the opening of the schools until a later date. Eventually, the 25th of September was decided upon, being three weeks later than the original and usual date of opening. We found that two weeks after the schools were assembled there was no increase in the number of cases reported. It is impossible to decide as to whether the changing of the original date of opening operated in any way to minimize the chances of a continu-

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ance of the epidemic. During the epidemic the principal wards affected were subjected to a thorough sanitary survey and considerable clean-up processes were demanded by householders by the Board of Health. This work of cleaning up the infected districts was assisted by volunteers developed along the lines of a unit organization or community effort. Much of this later work was successful in obtaining an improvement in fly screening as well as in the general care and control of babies and infants.

The state requirements concerning the certificates for children coming into the city were enforced by a guard of inspectors at railroad terminals and at trolley stations along roads leading to the city.

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THE NEWARK PLAN FOR THE AFTER-CARE OF VICTIMS OF INFANTILE PARALYSIS: ITS ORGANIZATION AND PRACTICAL WORKING

HENRY L. COIT, M. D., Newark, New Jersey

With a fine philanthropic spirit, the Newark plan for the after care of victims of infantile paralysis grew out of private initiative.

In the samaritan act, which is the essential principle of true charity, the giving of an extra "two pence" for the after care of the paralyzed children, was the first step; but in this case the "two pence" was increased a thousand fold by a voluntary gift of two hundred dollars.

With the terrorizing spread of the disease, and the rapid increase of cases early in July, it was soon apparent that a multitude of paralyzed children would, on the release from quarantine, constitute an appalling mass of helpless cripples.

A private citizen's contribution became the starting point for a citizens movement for relief. The gift was sent to a newspaper, which at once opened a campaign for a fund which rapidly grew to thousands of dollars, and now approaches the twenty-five thousand dollars asked for.

The mayor quickly followed with a Citizens Infantile Paralysis Relief Committee, including women, business men and physicians. The health department overwhelmed with the administrative details of the epidemic, employed almost its entire force in the apprehension, the identification, the isolation and the quarantine of the many cases reported to the health office daily. The citizens committee met, determined its functions and in conference with the mayor and the president of the Board of Health, marked off the division of work from this branch of the city government.

Very early after the onset of the epidemic, before any of the cases were released from quarantine by the health department, the citizens committee was organized for publicity and relief.

The sub-committee on relief adopted plans, including prophylaxis and after care, covering the work assigned to it, which were adopted by the general committee, and the relief committee was authorized to proceed with power to carry its plans into effect.

The system adopted by the citizens committee was based upon the declared opinion and official decision of the health department that

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the committee take up the work at the point where quarantine was lifted from cases of infantile paralysis, which had been released by the Board of Health.

The plan outlined by the sub-committee on relief included investigations of every case reported as to the home conditions with follow-up work by the highest type of trained nurse, under the direction of the committee. The committee was fortunate in having the co-operation of several philanthropic organizations engaged in social service and follow-up work. The Bureau of Associated Charities offered to contribute its corps of twenty-five visitors, and the superintendent of the bureau, as a member of the committee, lent his experience and judgment in directing this part of the work. The Visiting Nurse Association also volunteered its assistance, and its head worker was put in charge of the nurses employed for follow-up work.

The Prudential Insurance Company offered to print educational literature which was accepted. This resulted in the preparation of a pamphlet on prevention and after care by the chairman of the sub-committee on relief, which was edited and published by the chairman of the sub-committee on finance. A hundred thousand copies of this pamphlet were issued by the Prudential Insurance Company, printed in five languages without cost to the committee.

Other organizations have lent their aid in the conduct of the committee's work, namely: The Newark Anti-Tuberculosis Association, the New Jersey Branch of the Needlework Guild, the deaconesses of the Friendly Centers who rendered service in the distribution of the educational leaflet, the clinics and orthopedic staffs of the city including the City Dispensary, the Home for Crippled Children, the Babies' Hospital, German Hospital, St. Barnabas' Hospital, St. James' Hospital, Hospital for Women and Children, St. Michael's Hospital, the Homeopathic Hospital and Beth Israel Hospital.

Early in the month several of the hospitals assigned beds to the committee for the after care of cases which would need hospital treatment. One offered forty beds, another twenty beds, several others ten or more beds each, so that in the total, provision was made for all.

The clinics being opened by authority of the health officer, the sub-committee on relief was enabled to conduct many of the worthy indigent patients who needed treatment to these avenues of relief, and the one or more of these clinics were available every week day.

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The committee was in correspondence with the County Isolation Hospital, where several hundred of our cases were quarantined, and released funds to provide mechanical support for the cases judged to need it before dismissal. After dismissal, the committee's nurses followed these cases quickly to connect them with the family physician, or to take them regularly to the clinics so that adjustment of the apparatus and directions for proper treatment should be carried out in the home.

The committee provided printed matter for the social service investigation, the visiting nurses' records and for the various co-operating organizations, in order to secure uniform records of all cases for a later statistical study of the epidemic. To protect the committee and parents from pretenders, all applications for orthopedic appliances are made to the committee on blanks requiring definite knowledge of the need and of the surgeon before releasing funds for this purpose; such blanks were furnished only to registered physicians in the city and to all orthopedic clinics. Blank history charts were provided by the committee to secure the vital, the clinical and therapeutic data, in order that uniform records might be made by all the hospitals and the nine orthopedic clinics. Each hospital and clinic returns a carbon copy of the histories to the office of the committee, so that complete information may be obtained by the statistician after the work is finished.

These statistics will be of great value in studying the epidemic and its consequences. The committee was fortunate in securing the assistance of the statistical department of the Prudential Insurance Company, which will, for the committee, assemble the data of the acute and the convalescent stages of the cases for a study of the epidemic, as respects its course and consequences. Mr. Crum, through Dr. Hoffman's office, has much valuable information gathered during the past few years, which will be a basis for this study.

The committee communicated by letter with every registered physician in the city, offering its co-operation and assistance in the follow-up work in the home and in the efforts to divert the victims of infantile paralysis coming under its observation into the proper channels for the best results in restoring the children to perfect health.

The co-operative spirit on the part of the medical profession was manifest through the universal willingness to accept the assistance of the committee's nurses. The humanitarian and ameliorative features

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of the work, such as the relief of destitution due to a quarantined wage-earner, cannot be represented in this report, except to state that many heartrending and appealing situations were discovered and relieved in the follow-up work.

Not an insignificant factor of the relief work was the store house of dolls and toys sent by the public through the children. Our visiting nurses each day provided themselves with an assortment to encourage the patients and by the expectation awakened, their precautions were heeded and the child kept more quiet.

For the work in action, we would direct attention to our office in the United Charities Building. The secretary, Mrs. Spaulding Frazer, wife of the city counsel, has been untiring in her efforts and devotes most of her time to the work of managing the clerical force in our office, where clerks, stenographers and typewriters are busy transcribing information from the reports of the investigating bureau, the histories of the nurses and of the clinics upon indexed files.

Mention should be made of the interest shown and the splendid spirit of the staffs of the various clinics and hospitals. The superintendents of all the hospitals deserve praise for preparing their institutions for receiving patients for after care, assigning beds to the committee for referred cases.

The committee was fortunate in the co-operation of the health department, which by its rulings and official orders, opened the way for the committee's activities.

The committee was especially successful in securing the services of nurses with special experience and training for the follow-up work and nursing after care.

The standards for the visiting nurse determined by the committee were:

First. Qualified by a general hospital training.

Second. Of the grade registered by a State Board of Examiners.

Third. With experience in the technique of orthopedic methods.

Fourth. With mental poise and judgment mature enough to manage the terror stricken mother and to divert her from unwise methods of treatment. Such a woman soon sets a disturbed household in order, inspires confidence and leads a panicky mother from foolish practices into a willingness to follow directions.

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Nine such nurses are now in our service under pay, besides the head worker whose time is contributed. Others are retained for the increasing work on after care which it is estimated will last for 18 months or two years.

Of the fourteen hundred cases which represent the extent of the Newark epidemic, the committee has thus far investigated nearly one thousand after their release from quarantine. Many have been put in touch with and discharged to the family physician. A number still remain under quarantine, to be released to the committee later.

More than six hundred paralyzed children are now active cases under the committee's care, are being treated in the clinics and hospitals, and are visited regularly by our nurses who without the work of the Citizens Relief Committee would to a greater or less degree have been neglected, increasing to an alarming extent the number of deformities and life-long cripples which are the inevitable toll of this disease.

DISCUSSION

The Chairman: The problem in Newark, N. J., was widely different from the problem in the more or less partially settled states. Dr. Bracken of the Minnesota State Board of Health has had long experience of both ends of the work. The twin cities represent more or less concentration of population, but the vaster area of the state is more or less sparsely settled, and Minnesota has had its own troubles this year, which, while not comparing in numerical magnitude with those of the East, have afforded a fair basis for comparison and study. Dr. Braken will tell us of his recent and past experiences with respect to the management of poliomyelitis in Minnesota.

Dr. H. M. Bracken, Executive Secretary, State Board of Health, St. Paul, Minnesota: I am glad my talk is to be rather limited, for the subject is large enough even if we take a limited field in it. Dr. Frost has referred to the fact that this disease was in Minnesota in 1909 and 1910 and that it was early put on the list of reportable diseases. An attempt was made to study the disease thoroughly in 1910, but what was then done has been of no great help to us this year. Dr. Woodward has stated that ordinarily when dealing with communicable diseases we have to think of sickness and death, but that in dealing with this disease we must also think of the paralysis, which the parents dread. The result of that dread has been to produce a condition that does not exist in relation to any other communicable disease. As to the transmission of the disease, Dr. Frost has told you it was limited so far as New York was concerned, to a district not remote from that city. While we had a certain amount of hysteria in Minnesota we did not reach a point which required us to establish a state quarantine against any infected district. We did not find a single case traceable to infection from New York City.

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There is no question that we are at a loss as to how to handle this disease. A quarantine of the entire family is sometimes required. It is certainly difficult to account for some cases in remote sections. In dealing with other diseases there is often great difficulty in enforcing quarantine, but this year in dealing with this disease it was a question in Minnesota of the doctors keeping up with the people. The people wanted to know if the disease was poliomyelitis, and if so, they wanted to have it handled in such way as not to endanger others. Our physicians were generally on the alert and took the position that the people had a right to the benefit of a doubt, and hence some cases were diagnosed as poliomyelitis when the diagnosis was reversed later. We were glad to have it so. We would rather have a few cases that were not poliomyelitis reported as such than to have a lot of cases overlooked because they did not have the classical symptoms of the disease.

Recognizing our helplessness in dealing with this disease, we have simply done the best we could. We accepted the isolation period of six weeks, accepted also the two weeks requirements for observation of those people who had been closely associated with cases. We have not turned the patients off when they have recovered from the acute symptoms, but have arranged that one of the orthopedists of the state should act as general and his assistants follow up every paralyzed case in the state, and we have a record of all of them. We expect the parents or guardians of those who are paralyzed to be instructed as to what treatment should be given the case if they are able to give it themselves. If they are not, we expect the child to be turned over to the state hospital for crippled children, where it will be given ideal care. We look on that as part of the public health work. We do not believe our obligation stops with the release from quarantine, but it is our duty to put the individual back in the community in as good shape as possible for his future as a citizen.

The Chairman: We shall now hear from one of the little New England commonwealths where the Pilgrim Fathers landed, and where they burned the witches, and threw the tea overboard, and fought the Battle of Bunker Hill when Minnesota was a howling wilderness and where they have done better epidemiologic work with reference to poliomyelitis than has been done anywhere else in this country, and perhaps in the world. I take pleasure in introducing Dr. A. J. McLaughlin, Commissioner of Health, State Department of Health, Massachusetts.

Dr. A. J. McLaughlin, Commissioner of Health, State Department of Health, Boston, Massachusetts: Thank you for the compliment to the work of the State Board of Health, which I believe is deserved. I can say this because it was initiated and carried on for years before I came into the state, and I personally deserve no part of the credit except in so far as I have made a feeble effort to carry it on in the two years I have been Commissioner of Health.

This disease makes us feel peculiarly helpless as health officers; as Dr. Bracken so well said. Our efforts seem so futile, we can simply do the best we can. We have certain established facts based on research work which warrant

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us in the light of our present knowledge in treating this as a contagious disease. The work we have done in Massachusetts in continuing intensive study of each case, will, we hope, bring further light. But I feel it would be premature to make any statement in advance.

One thing stands out prominently, the contradictory manifestations of the disease in the field. In almost every phase of study it is contradictory, showing consistency only on two points, first, season; second, age incidence.

The low attack rate, one per thousand, would suggest lack of susceptibility in the bulk of the population. Whether this insusceptibility is due to actual immunity remains to be demonstrated. That is the most plausible explanation.

In regard to age incidence, one thing has occurred to me, if we have an actual immunizing influence going on, the influence will be greater where population is most congested. When you have an immunizing influence in the shape of a light form of the disease, this influence would be most active in great centers of population. Therefore there would be relatively less susceptible material in great cities than in rural districts. If that reasoning is sound, the age incidence in rural districts would necessarily be higher or the limit of age of the group affected would be higher.

Is this so? We have not collected enough data on this point to make any possible conclusion. But we took one group of rural towns, ranging in population from 400 to something under 2,500, in the aggregate about 22,000 and found the attack rate in this area was one per thousand. We took a small city of the same size and with the same attack rate and found the age incidence was strikingly different. In North Adams there were about 80 per cent under five years of age, 20 per cent between five and ten, and none over ten. In a rural group of about the same size there were 37 per cent under five, 26 per cent from five to ten, and 37 per cent over ten. These data are insufficient for positive deduction, but they are suggestive.

There have been two mistakes in observation that I think must be corrected, one individual, the other general. The first of these mistakes has been on the part of the doctor in studying individual cases in expecting paralysis inevitably. Some health officers refuse to make a diagnosis unless there is paralysis. If this is a communicable disease it has the common characteristics of such diseases and should have every gradation, from the mild case, the carrier who is not ill at all, to the very grave case and it is reasonable to suppose that this disease is no exception to the general rule. We have had light cases and cases that were unrecognizable, and we know of many cases that would have passed at other times that have been recognized in this epidemic, cases that would have passed with the statement that Johnny had eaten something that did not agree with him. The effort to do something for the sake of doing something has caused us to spend many nights of worry. We secured a small appropriation for epidemiologic intensive study, and intend to use it especially in cases occurring far enough from epidemic centers to be valuable. If you study cases in epidemic centers the trails are so crossed you cannot trace the infection. As

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Dr. Frost said, on the fringe of these centers the bulk of the money can be well spent.

It is imperative that we be able to find the abortive, light cases and carriers. As practical health officers we need a diagnostic procedure that is reasonably specific and comparatively easy in technique to determine the presence of the disease. This is needed, not only in the interest of the patient, but early diagnosis is essential for the protection of the community in detecting carriers and light cases. We also need a diagnostic procedure reasonably easy of application which will determine the presence or absence of immunity, such as the Schick test does for diphtheria.

Another $5,000 is being used for care of crippled children. We have no state university, but Harvard has shown a spirit of co-operation, and they have an Infantile Paralysis Commission, which we have made our agents without pay. They are doing research work and have charge of the after care of crippled children. The work is already started, and we shall be able to take care of our crippled children as fast as we can enroll them. It will be rather an easy problem to handle. We have muscle testers and nurses go to them, and all this work will be under the direct supervision of one of the best orthopedists in the country, Dr. Lovett, of Boston.

Dr. C. A. Harper, Secretary, State Board of Health, Madison, Wisconsin: We are in the same position as many other states throughout the northern part of the United States. Since the first of July, 1916, we have had 409 cases of infantile paralysis reported. The death rate is running about ten per cent. Before July there were from January first, forty cases. The previous years there were very few cases. In 1909 we had an epidemic of this disease somewhat localized, starting in the city of Eau Claire. There were some 450 to 500 cases as a result of this epidemic. Three hundred and fifty cases received more or less careful investigation by Dr. Manning. A death rate of 15.5 per cent resulted. The peculiar thing about this epidemic was that it spread north and northwest from the original foci and along certain lines of travel, yet the other lines of travel came to the south and southeast part of the state and in this region there were practically no foci. This epidemic was serious. There appeared to be a special susceptibility to individuals in that area. One family from a southern city visiting in Eau Claire returned home and in two days two children came down with this disease, evidently emphasizing the fact that these children contracted the disease in the city where it was prevalent. On returning home these children before becoming ill were associating with many children and hence, many other children were exposed; yet there were no other cases in this particular southern city.

Following the epidemic in Eau Claire and the northwestern part of the state we had an epidemic in Richland Center in the southwestern portion of the state. This epidemic was short and fierce; mortality nearly 23 per cent, attacking individuals as high as 60 years of age. These were the only epidemics we had except in 1914 when there was a small localized epidemic in a southwestern county of the state and the three counties bordering on that county. The notable condition

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at present is that the area affected in 1909 is practically free from the disease at present, not only in the northwestern district, but also in the southern counties. We are investigating every case. All cases are reported to the central office by telephone or telegraph and a full history of each case is recorded. The physicians are on the alert; they are anxious and asking for information.

We have not as yet adopted any plan for taking care of those now crippled as a result of the disease. We have, however, in conjunction with one of the state institutions a place where cripples may go and be treated under state supervision. In addition to this provision, I believe, there should be a procedure such as Minnesota and Massachusetts have developed to take care of those not only of the indigent class but of any or all classes.

One little incident might be of interest. In one of our cities the father of a family broke his arm. His brother-in-law was a physician in a city about sixty miles away. He went and stayed with his brother-in-law and had him take care of his arm. In that city there were five cases of infantile paralysis. There were no cases in the locality where the patient with the broken arm lived. The five cases where the father was visiting, so to speak, were all quarantined. The father on returning to his home used what is known as ordinary precautions, although not aware that he had been exposed to the disease. Nine days after he returned home his two children came down with the disease. The evidence appears to be strong that he carried the disease.

There is another instance, where a family in a certain county received a large consignment of fruit from New York, and shortly after this a case of infantile paralysis appeared in the family.

Wisconsin is on the anxious seat as every state in the Union is. We have taken advantage of the hysteria now prevalent and have instructed the health officers of every city and village to institute a general clean-up, and have intimated that if the municipalities in the coming year have not cleaned up in a manner that shows a considerable change, the municipality in its entirety next year will be quarantined, should cases of infantile paralysis develop. We are making the instructions urgent, and have the power to use the hammer, if necessary. In many municipalities it is working out admirably. In the individual homes as well as in the municipality, I believe, absolute cleanliness is going to be a great factor in the elimination of anterior poliomyelitis.

Dr. Wilmer R. Batt, Registrar of Vital Statistics, State Department of Health, Harrisburg, Pennsylvania: To thoroughly appreciate the present status of poliomyelitis as a communicable disease, and the rather extraordinary measures directed to its control in Pennsylvania during the past three months, brief note should be taken of the stages through which it reached its present prominence.

The attention of the Commissioner of Health was first directed to poliomyelitis through the occurrence of a mild outbreak of the disease, limited to 131 cases distributed through five adjacent counties, which occurred in September, 1907.

In 1908 a small number of cases occurred in a rather limited area, which, on account of the exaggerated meningeal irritation manifested, were mistaken for

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cerebrospinal meningitis. Only a portion of a single county was involved, and but few sporadic cases occurred in other sections of the state. During 1909 there was no evidence of the disease existing in any unusual degree.

The experience of 1907 and 1908, together with the epidemic in 1909 in Massachusetts, prompted the Commissioner of Health and his Advisory Board in the early part of 1910 to make poliomyelitis a reportable disease. Our first complete morbidity reports covering this affection, therefore, date from July 1 of that year.

As indicated by mortality statistics, there had been no unusual prevalence of the disease in 1910 prior to July 1, but during the month of July there were reported 152 cases, in August 275 cases, in September 378 cases, in October 197 cases, in November 95 cases and in December 15 cases; making a total of 1,112 cases for the six months ending December 31—with 269 deaths.

These cases were rather widely distributed, 628 being urban and 484 scattered through the rural sections of the state—55 of the 67 counties being involved.

The incidence of the disease in the following five years, that is, 1911 to 1915, inclusive, shows but comparatively few isolated cases, distributed as follows:

1911	177	cases
1912	267	"
1913	141	"
1914	113	"
1915	162	"

The only concentration of cases noted during any of the years mentioned was a limited outbreak in a portion of the bituminous coal region in the southwestern part of the state in 1914, amounting to 32 cases; and in 1915 an outbreak confined to the extreme northwestern part of the state, in the city and county of Erie, with a few cases in immediately contiguous counties—amounting in all to 104.

Up to July 1, 1916, but 22 cases had been reported throughout the state.

Reports of the outbreak of the disease in Greater New York, and the fact that cases from that territory were immigrating in the active stage of the disease, and others were sickening within a few days of their arrival in the state—together with the experience of the later summer months of 1910 vividly in mind—the Commissioner and the Advisory Board of the State Department of Health on July 8, 1916, by regulation, made the disease quarantinable for a period of twenty-one days, and applied to all cases occurring in the state the same methods of absolute isolation, with guards and disinfection, which were employed in the management of small pox. At the same time immediate notification by telephone or telegraph to the State Department of Health was required of all cases and deaths as they occurred. Every case reported was visited by medical inspectors of the Department of Health and the diagnosis carefully verified.

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The progress of the disease during July was as follows:

1st week.....16 cases
2nd " .....23 "
3rd " .....38 "
4th " .....60 "
and for the 5th " ending August 5.....101 " reported.

On August 7th it was determined to establish a quarantine at the State border, in order to protect against the importation of cases suffering with the disease, or of those who might have been exposed thereto; and in cases occurring within the state the quarantine period was extended from twenty-one to thirty days.

According to advices at that time, the disease was unusually prevalent in New York, certain portions of the New England States and New Jersey; therefore, the most thorough quarantine was enforced upon the eastern borders of the state.

As the Delaware River marks the dividing line between Pennsylvania, New York and New Jersey, the avenues of ingress consist of railroads, bridges and ferries, all of which were guarded night and day. Through trains were examined at their first stopping point within the State, and a river patrol established on the navigable portion of the Delaware. Admission was refused all children under sixteen years of age, who could not furnish a certificate signed by the health authorities at their point of departure, certifying to the fact that they were not suffering from poliomyelitis, and had not been exposed to known cases of the disease.

Railroads and other principal avenues of travel on other portions of the border of the state were also covered by quarantine guards— in all 191 places were so guarded by 313 officers.

At the principal railroad and ferry terminals in Philadelphia nurses were also stationed to render whatever assistance might be necesary. Children unprovided with certificates were either turned back or held until the necessary information could be secured.

In addition to the points of ingress covered by guards, the health officer of each of the 931 boroughs and cities, together with the 750 township health officers, were constantly active in the inspection of children coming into their respective districts from points within as well as beyond the state. Passenger coaches and railroad trains were disinfected daily. When certificates of travel were issued to children from infected areas the health authorities at destination were notified to hold them under observation.

During the month of August the cases occurred in the following sequence:
Week ending August 12, being the 6th week of the epidemic.....171 cases
Week ending August 19, being the 7th week of the epidemic.....198 cases
Week ending August 26, being the 8th week of the epidemic.....227 cases
(This being the high point of the epidemic)
The week ending September 2, or 9th week of the epidemic, 217 cases were reported.

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As the first week in September marks the beginning of the school year, it was deemed advisable to prohibit the attendance of all children under sixteen years of age; and after consultation with the educational authorities, who deemed it inexpedient to attempt the partial opening of the schools, it was decided to postpone the beginning of the school term until September 29.

The attendance of children under sixteen years of age at moving picture shows, Sunday schools and other public gatherings was also prohibited.

For the week ending Sept. 9, or 10th week of the epidemic, 220 cases occurred
For the week ending Sept. 16, or 11th week of the epidemic, 162 cases occurred
For the week ending Sept. 23, or 12th week of the epidemic, 159 cases occurred
For the week ending Sept. 30, or 13th week of the epidemic, 123 cases occurred

On October 1 the border quarantine was withdrawn, the public schools resumed, and children were permitted to attend Sunday schools and other gatherings.

For the week ending October 7, the 14th week of the epidemic, 68 cases occurred, and for the week ending October 14, the 15th week of the epidemic, 30 cases occurred. The total number of cases up to and including the latter date was 1,612, and the number of deaths for the same period was 442.

Of the total, 897 cases or approximately 55 per cent occurred in the city of Philadelphia. The balance were distributed through 61 of the 67 counties of the state.

Nurses were supplied to every indigent case. Special efforts were made to provide hospital facilities, where any unusual concentration of cases occurred, and every effort was made to provide for the after-treatment of indigent cases where the crippling effects of the paralysis were evident.

The laboratory facilities of the Department of Health were most freely employed in an effort to secure a definite infective agent or the method of transmission; but the solution of both problems remains to the future. An interesting line of inoculative experiments is contained in the Report of the Department for the year 1911. More recent work during 1916 will be published during the coming year.

As to whether the quarantine methods adopted were justified, or whether they played any part in lessening the epidemic, can only be determined when our knowledge as to the cause and methods of transmission is complete and exact. Certain it is, that the migratory movements of children were very much restricted, and that some highly desirable education was received by parents on the care of children during the summer months. Perhaps no such wave of hysteria has been experienced since small pox, cholera or yellow fever carried panic into the hearts of the people, and it is quite certain that restrictive methods were absolutely necessary if the faith of the people in public health work was not to be utterly destroyed.

Dr. John S. Fulton, Secretary of the State Board of Health, Baltimore, Maryland: I wish to speak to one point only, concerning poliomyelitis. I want to pay my respects to interstate and interurban quarantine, a phenomenon with

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which I have had this year my first and, I hope, my last experience. Those of us who have been in the public health game, in this latitude, for a good many years, knew practically nothing about interstate or interurban quarantine on any great scale, until the year 1916. We had second-hand knowledge about that sort of public hygiene in the yellow fever days. Only half a dozen, or perhaps eight or ten men had practical experience in rigid border-quarantine. They lived in the Gulf States of the United States, and their very interesting procedure has since passed into history. It is worth recalling. During the spring months these health officers on the Gulf of Mexico were principally engaged in watching each other. I don't know how they found out just which of the available points of entry were going to be the real points of invasion for yellow fever, but they generally did find out.

If the indications pointed strongly to New Orleans, you would find the health officers of Alabama, Mississippi, Louisiana, Tennessee and Texas, all in New Orleans, early in July. There they would be engaged for sometime in a fine diplomatic game. The visiting health officers made such investigations as they could without the assistance of Louisiana officials, and Louisiana officials furnished such information as could not be withheld.

The presence of yellow fever in New Orleans could not be officially declared by the city health officer. Only the State Board of Health could declare the presence of yellow fever, and its presence had to be proved up to the hilt. The visiting health officers had the prosecutor's side and the local officials had the defendant's side, of the argument. Meanwhile the people, having their own sources of information, would act accordingly. If yellow fever were present, an exodus would begin, and a very active exodus would make a victory for the visiting health officers. Then they ran home and began hostilities against New Orleans. The official declaration that yellow fever was present generally followed the popular exodus. The Louisiana state officials would inform the health officer of New Orleans, and the health officer would inform the city Board of Trade, and eventually the people would learn that yellow fever was officially on the rampage. Every kind of punctilio then gave way to the hostilities of state and local quarantine.

We in the North thought that all this was temperamental; that matters would not be handled in such fashion in cooler latitudes among people with more stable psychic make-up.

But in 1916, when poliomyelitis came to New York, similar phenomena occurred in the North. One small town quarantined against a neighboring town, and this spread from town to town until the confusion of quarantine was exalted to its highest magnitude. Eventually four or five states became involved in interstate quarantine. That happened to Maryland just after the fifth of August, when Pennsylvania's second quarantine was declared. The first quarantine had no reference to Maryland, but the second did, and so did the subsequent quarantine by New Jersey, and still later by Virginia. In a little while we were all tarred with the same stick, and if my remarks seem a little warm you must remember that I am in the midst of it myself.

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When we first knew that the State of Maryland was quarantined we had a good deal of fun about it in the State Department of Health. We had been certifying a few people who wanted to go north—it was a time of year when children were moving pretty actively—so we knew certification was a considerable task, and we had some hilarious talk about the certification that was going to be.

Our hour of merriment was the shortest I ever knew. Our corridors became thronged with people who wanted to transport children. In the Baltimore Health Department there were similar activities on a large scale. Federal officers in uniform were very busy ticketing the traveling public with official declarations concerning poliomyelitis, and sending them away to all the world outside of Maryland. Meanwhile the other states were sending travelers, similarly placarded, to Maryland.

We had been telling the people of Maryland that there was no cause for alarm; that we had not yet as much poliomyelitis as in 1915, when we had had 83 cases; and that there was probably no danger of an epidemic. People did not care what we said about numbers. They saw what was happening at the railroad stations and wharves. They saw that unprecedented precautions were being taken over what we pronounced a trifling danger. They had to think either that we were crazy, or else that the number of cases, whether small or great, really meant an epidemic. We had a definite hysteria concerning poliomyelitis, affecting not only the general traveling public, but also the medical men. There was hardly any exemption from this unreasoning fear. It became intensely embarrassing and a little irritating.

I give a few illustrations of this psychosis. A father, after playing with a perfectly healthy child, presently found that the child's arm was disabled, and that it was slightly sick. A physician pronounced a diagnosis of poliomyelitis. Another physician was called, and he said that the child's arm was broken. An X-ray examination showed a fracture. The father had probably broken the child's arm.

The patrons of G School were thrown into panic by the report that a child had been taken home sick with poliomyelitis. Immense telephone activity ensued. In explanation it was learned that two small boys engaged in a fight, went to the ground, and the under boy refused to rise when the hostilities were interrupted. He had to be picked up and carried home. He had a paralysis of the will to fight.

An inspector detained, at Union Station, a child four years old, having a temperature of 99.5 and some disorder of the reflexes. The child was going with its mother to a new home in Pennsylvania. The trip was postponed and the party was sent back to the old home in Baltimore County. A few hours later the local health officer reported that the child was quite well, and that the disorderly reflexes had been caused by farewell potations of beer.

The main point which I wish to make concerns the quality of quarantine acts. A declaration of quarantine is an unfriendly act. It seems to me that no state has a right to impose a great burden of certification and notification on

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another state. In Maryland we wondered what we should have done, if we had had an epidemic to fight, while at the same time certifying such amounts of travel. I conclude that we should have failed in our internal responsibilities, or in our external responsibilities, if not in both. We did not consider it an unfriendly act to quarantine against Maryland. We thought it foolish, and were at first amused by it. If there had been an epidemic in Maryland at the time we should have considered the declaration of quarantine an unfriendly act, though we should not have said so.

My experience in 1916, convinces me that an act of quarantine, by a non-infected state, against an infected state, necessarily imposes upon the quarantined state additional burdens which may readily prove disabling as to its internal defenses, and so fail to provide, on both sides of the boundary, that defense for which quarantine is instituted.

In a season of surprises, nothing was more surprising to me than the great diversion of our official attention from the small number of persons who are sick, to the great numbers of perfectly healthy people who are traveling. Why should health officers concern themselves so much with these great numbers? Can they be actively concerned with so great numbers, without prejudice to the vastly more important small numbers who are sick?

We must assume, for civilized states—and the quarantining states are civilized, including my own state—that sick people are cared for, and contacts properly supervised. If so the grist is bolted, and the meal is worth more than the husk. Quarantine puts a greater price on the husk than on the meal. This enormously expensive quarantine procedure, with which I have had my first experience in 1916, did not, I am sure, secure to Maryland or any other state any defense which could not have been secured at trifling cost through the notification which Dr. Banks has described here this morning. I am aware that the United States Public Health Service has no long practice in such notification. I am sure that it can be better done. But the incoming notification to Maryland was vastly more useful than any notification service rendered or offered by any other state or city to the health authorities of Maryland. It served every legitimate purpose, and such additional safety as could have been secured by inspecting the highways or interstate travel was, I am convinced, not worth a thousandth part of its cost.

The State of Maryland has had no border guards, to the great disappointment apparently, of returning Marylanders. You have no idea how a man fancies himself after he has passed six examinations in a single journey; or how crestfallen he can be when he crosses the boundary of his own state and finds that there will be no seventh examination by his own health authorities. Such men are apt to feel that, after heroic adventure, they are received without honor among their own kindred.

This spectacular kind of hygiene has admirers in Maryland. Most of the extravagant features in quarantine have appeared in Maryland in 1916. Travelers are still being examined in some parts of the state, and restrictions on the travel of children are still in force. I do not pretend that we got into a medieval kind of mess in spite of a clear official judgment that should have restrained us;

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or that there was any well informed critical faculty among us which could have restrained us. Without difficulty we got into some foolishness, and now it is difficult to get out wisely.

Dr. S. Josephine Baker, Director of the Bureau of Child Hygiene, Department of Health, New York City: It seems almost superfluous to bring New York into this discussion. We have been so much in the limelight during the past summer that it is better, perhaps, that we should stay in the background now. It seems to me that this entire question of poliomyelitis has been carefully considered at this meeting and we in New York do not feel that our epidemiological studies are yet far enough advanced so that we can draw any definite conclusions other than those that have already been brought forward.

There are, however, a few points of interest in connection with this outbreak of poliomyelitis that have not already been touched upon. One of these is the fact that in over ninety-six per cent of all cases occurring in New York City this last year there was only one case in a family. The extraordinarily high death rate of twenty-four per cent is another interesting point.

The first point I have mentioned needs no comment but I should like to speak further regarding the high death rate not because I feel that I can explain it with any authority but I should like to have your reaction on the subject. Because this is a conference on the prevention of infant mortality, I know that you are all cognizant of the fact that infant mortality in institutions is always appreciably higher than it is in private homes, notwithstanding that the institutional management may be of the most advanced type. Is it not possible, therefore, that at least some of this high death rate in infantile paralysis is due to the fact that we have practiced extreme hospitalization in these cases? We have taken very young children from their homes, separated them from their mothers, and placed them in hospitals. I am not prepared to say that this is the cause of the high death rate but I do feel that, in the light of our present knowledge of the unfortunate effects of separating mother and baby, hospitalization may have something to do with the high death rate.

The third point is a fact which may not be generally known, but it is one that we in New York are holding on tight to as the one bright spot in this very hectic year. I have been through many epidemics but I have never before experienced an epidemic of fear such as this has been. Indeed, it has been the greatest epidemic of hysteria that I have ever known but there has been one result which has been well worth while.

In New York City for the first nine months of this year there were 1,022 fewer deaths under one year of age than for the same period last year. This has been particularly interesting because during this past summer we have encountered every condition that we have been avoiding and fighting for ten years. Mothers and babies have been staying in town and the fresh air agencies have been practically put out of business because no one outside New York City would receive a child coming from the city. In addition, the mothers have been so frightened that during the early part of the summer particularly, they kept their babies in almost hermetically sealed homes and were disinclined to take them out to any

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place, even to the baby health stations. In all ways this was as difficult a situation as could be imagined, from the point of view of the welfare of the babies. We have had, however, one thing that we have never had before, and that is an almost universally receptive state of mind on the part of the mothers as to the importance of baby care. While, in the past, we have had mothers who were indifferent or lax, this year every mother was not only willing but most anxious to learn everything she possibly could about the care of her baby. The women have been seeking instruction and the reaction has been such that the general health of babies has been very much better this year than for many years in the past and, from the present record, we shall probably have in New York City this year the lowest infant death rate in our history. This decrease in the death rate represents mainly a decrease in the diarrheal diseases which, we believe, are more directly reached by public health instruction than are any other classes of diseases so, in spite of the hard experiences we have been through we feel that at least in one direction we have made a notable advance and that there may have been something productive of good even in so extensive an outbreak of a very serious disease.

Dr. Wilbur A. Sawyer, Secretary, State Board of Health, Sacramento, California: I should like to testify for one of the states at the most distant receiving end of this poliomyelitis epidemic regarding certain defects in the present methods of control. When the United States Public Health Service very rightly took a hand in the control work at New York they sent notices regarding persons leaving New York City to the local health officer at the point of destination. Later all these reports were forwarded exclusivly to State Boards of Health, a system involving delay and permitting the traveler to arrive before the notice. We requested direct notification to California health officers, but the Public Health Service felt bound by the action of the surgeon-general's conference with the state and territorial health authorities held on August 17 of this year, and was unable to accede to our request.

Another defect in the present method of control as outlined in the rules drawn up at the conference already mentioned is the neglect of the control of the adult "contact" who may be a poliomyelitis carrier. The supervision of travelers is, in these rules, largely limited to persons under sixteen years of age. There is no evidence that people under sixteen are distributing the disease any more than those over sixteen. The rules were given widespread publicity among health officials and have given the false impression that there is a scientific basis for this discrimination. In our California regulations we require notification regarding all persons entering the state from territory in which poliomyelitis is epidemic, regardless of the age of the traveler.

In many places health officials have taken advantage of the general apprehension regarding poliomyelitis in order to carry through schemes in no way related to the disease. It has been dinned in the ears of the public that a scourge of infantile paralysis will arrive if they do not carry out a clean-up campaign or pasteurize their milk supply, in spite of the fact that science has failed

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to show any relation between refuse heaps or milk supplies and poliomyelitis. Therefore I wish to protest against our taking any part in such deception of the public, even for laudable ends. We are fighting poliomyelitis on the basis of an increasing volume of evidence that it is spread by human beings, most of them healthy carriers. Our public statements, as well as our official acts, should be consistent with our convictions.

Dr. J. H. Mason Knox, Medical Director, Babies' Milk Fund Association, Baltimore: I was interested in what Dr. Baker said in reference to the improvement in regard to the gastro-intestinal diseases, notwithstanding the alarm of the public. We have had in Baltimore, since July, 350 deaths from these diseases and about 50 from infantile paralysis. A little hysteria about gastro-intestinal diseases would be a good thing. We are too complacent on that question. But I hope we are going to have a lower death rate in that also. We could have that easily if we would only use this psychological moment to point out to the public the real facts, the real dangers of the case.

The other part of this discussion has illustrated a question which some of us have faced over and over again; the question of federal control. It seems to me that the only way to combat a disease epidemic in character, and interstate in transmission, is through federal control. The one thing that seems conclusive in this epidemic has been that if we had given the United States Government entire charge of the matter instead of giving opportunity for so much rivalry between states concerning quarantine, we should have had some uniformity in the control of this epidemic. I hope that later on, as in the case of yellow fever, for instance, we shall come to see the absurdity of the situation and let such a matter be put into the hands of United States Government officials.

Dr. F. H. Allen, Holyoke, Mass.: In Holyoke we had 91 cases. There was strict quarantine, and through that 26 incipient cases were recognized. Of the 26 incipient cases, all verified by the Noguchi and Flexner test, 22 developed nothing but a very slight paralysis. We found 15 or 20 families where two or more cases occurred in the same family.

A Speaker: One thing about quarantining the individual household—the doctors and the people soon protested about being shut up thirty days. As a natural result of the rule a number of cases without paralysis were not reported at all, so the statistics are distinctly deficient in incipient cases. A doctor would be rather afraid to report a case unless he was very positive. There must have been an enormous number of cases in which diagnosis was not made. Of course the fact that 80 per cent of the cases went to the hospital may have had something to do with the excessive mortality.

Dr. L. M. Powers, Commissioner of Health, Los Angeles: What constitutes quarantine? In what way are they restrained or controlled? In our part of the country we exercise different methods of restraint or control and call it quarantine. Is your quarantine complete or incomplete?

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The Chairman: Can anyone throw any light on what quarantine is? In Philadelphia they attempted to keep everyone on the premises, including the wage-earner, enforcing it by guards. In the City of New York they undertook to quarantine the patient with the mother or other nurse, requiring her to abstain from all household duties while caring for the patient—she could not get her husband's breakfast or comb Mary's hair—and mother and children and patient were all kept on the premises, but the adults came and went.

Dr. Allen: Our quarantine meant not only quarantine of the tenement where the patient was, but of all other inhabitants of the tenement, with guards on eight-hour shifts.

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PUBLIC SCHOOL EDUCATION FOR THE PREVENTION OF INFANT MORTALITY

Friday, October 20, 1916, 2.30–4.30 p. m.

COMMITTEE

CHAIRMAN

PROF. ABBY L. MARLATT, Director of Home Economics, University of Wisconsin, Madison

SECRETARY

DR. DOROTHY REED MENDENHALL, Special Lecturer on Child Welfare Work, Extension Service, University of Wisconsin, Madison

DR. ALICE BLOOD, Director of Course in Home Economics, Simmons College, Boston

MISS MATHILDE KRUEGER, Chairman, State Committee of Examiners of Registered Nurses, Neenah, Wis.

MISS BESS M. ROWE, Leader of Extension Work in Home Economics, University of Minnesota

Topic: The Educational Possibilities in Cooperation between Public and Private Hospital Service and Public School Education, in High Schools, Vocational Schools, College and University Extension Work

Chairman's Report on College Work

Work of Extension Departments in Educating the Mother along the Lines of Prenatal Care

The Relation of Baby Clinic Work to the Classes in Dietetics in College Courses

Visiting Baby Clinics and Hospital Experience as an Aid to the Extension Worker

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PUBLIC SCHOOL EDUCATION FOR THE PREVENTION OF INFANT MORTALITY

Chairman's Report on College Work

ABBY L. MARLATT, University of Wisconsin, Madison

The subject, as you know, at this session, is the possibility of affiliation with hospital work in connection with public school education. In our previous sessions in the meetings of the association, we have dealt with the possibility in the high school of courses which will equip the girl for her future work. At this session we hope to present co-operation of hospitals and the trained nursing forces with college and extension work. A good deal of this cooperative work has been done, some organized and some rather desultory. In the eastern cities there are organizations of "Little Mothers Clubs," which are affiliated with the school, though not necessarily a part of public school education.

The young woman has been educated along almost every line except the fundamental one which will be her main problem in her life. It is stated that 85 per cent of the women marry, and that they go into this work with a more or less imperfect understanding of the situation. Those that have listened to the discussion at our sessions this week will remember that practically every speaker made the statement that after all the fundamental thing is the education of the parents (—they didn't say parents—most of them, I am sorry to say, said "mothers").

If this education is to be given there must be a revolution in the teaching of young women so that they may meet the world problems of eugenics and nurture with at least an understanding and open mind. Ignorance can no longer be mistaken for innocence, but must be recognized as criminal in its final effect.

Studies of population in regard to birth and death rates as a measure of the education of a race and the resultant standards in marriage, divorce, housing conditions, food habits and general hygiene are part of every liberal college course.

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Technical knowledge of preventive measures is not so often insisted upon—legislation alone never reforms—action based on knowledge of ways and means must follow and be automatic in the lives of each citizen before reformation is possible.

In the reduction of the infant mortality rate the most potent factor has been shown to be prenatal care based on scientific knowledge acquired before the need arises.

In what way and through what avenues may this knowledge be given? In this conference on the study and prevention of infant mortality no line of work which does not reckon with the future mother can ever succeed.

She is the source and in her education the public and private schools must provide those courses which will make it possible to eliminate the frightful loss of life during the first month after birth—fully one-half of the infant mortality occurring during this first month.

The subject matter must cover not only personal hygiene, feeding, clothing, housing, care of the sick, but courses in child care, in which through talks, texts, demonstration, and actual practice such child care may be made fundamentally practical. In previous reports there have been outlined such courses for high schools and vocational schools.

As far as united action is concerned, there are very few of the colleges that at all approach the subject. Most of these institutions are giving these courses under the name of home economics rather than child welfare work. This is due to the fact that home economics work is the easiest field where this teaching can be introduced. It can be given in connection with the study of foods, clothing and personal hygiene.

In all of these the utilization of the hospital staff and hospital equipment has been suggested.

In these courses the hospital staff of trained physicians give lectures which cover the following subjects: Infant feeding; infant diseases; prenatal care; normal development of the child; breast feeding; artificial feeding; and demonstration by the hospital dietitian and superintendent of nurses on laboratory technique of milk modification; on bathing the baby; on clothing for the baby.

This cooperation with the best city and private hospitals has been through classes assembling at the hospitals for the lectures and

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in the smaller groups for the demonstrations. This work is supplemented by lectures and laboratory work in the college courses in dietetics and home nursing.

It gives a basis on which future study may build and through the familiarity with the hospital staff and equipment removes the dread of the unknown and may lead to more nearly intelligent social service work, and sane and wholesome teaching to the girl in the high school who is so dependent for her standards on the teacher with whom she comes in contact.

That this constructive work in teaching child care through use of the hospital as a laboratory has originated in those institutions where home economics courses are well developed is not surprising, as these courses are built around the conserving of all that is best in the home and making it recognized as the important factor in the national life.

What has been done at Simmons College, Boston, is quite characteristic of the work. Dr. Alice S. Blood, who is a member of the committee, has given a short outline of the work at Simmons this year. "The course consisted of four lectures and four demonstrations given at the Infants Hospital—a lecture on prenatal care by Dr. Emmons, a lecture on the normal development of the child by Dr. Dunn, a lecture on breast feeding and one on modified milk feeding by Dr. Howell, two demonstrations on milk modification by Miss Wilson, a demonstration on bathing the baby and one on clothing the baby by Miss Gregg. The lectures were given to a group of sixty students. For demonstrations the class was divided into small groups, but the work was entirely demonstrational. We are going to do work next year on much the same plan, but it will be a part of a course in home nursing and child care—the work in home nursing being given under Miss Johnson, at the Peter Bent Brigham Hospital. We are extending our work this year in the direction of a course in home nursing and bedside care given at the Peter Bent Brigham Hospital. The work is being given by the assistant superintendent of nurses.

With reference to the work at the University of Minnesota, Prof, Josephine T. Berry, Chief of the Division of Home Economics, says: "We haven't any very satisfactory relation with the hospital of the University of Minnesota, due to the fact that the work of the dietitian there is limited to preparation of food for the wards and the staff,

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offering very little private tray work. The hospital also is so crowded that they cannot give up any space to pupil dietitians.

"Dr. Sedgwick, of the Department of Pediatrics, gives five or six lectures and demonstrations as a part of our course in dietitics. He treats the topics of infant feeding and infant's diseases.

"The City Hospital, of Minneapolis, has just instituted a course for pupil dietitians . It is their plan to have all of the time four pupil dietitians and to have each one there for a period of four months. Through this we expect to be able to give our students experience which will lead pretty directly to employment as hospital dietitians."

In nearly all those colleges where home economics is taught, courses in dietitics have been given as prerequisite studies. The study in baby clinics has not been so common. The moving of the class over to the hospital for lectures and demonstration work is a move in the right direction. We must have clinics in which to teach our young women if we are going to put this relation of home economics to the work of the school and district nurse on the basis that it ought to be.

In the University of Wisconsin, where the home economics department has been in the College of Agriculture for seven years, there has been a close cooperation with the Madison General Hospital, the students going to the hospital for demonstration work in all the phases of nursing that seems advisable for them to know, special lectures and demonstrations being given on the baby, the clothing and bathing, etc. The biological courses that precede this are courses in embryology, and courses on the development of the child before birth and during adolescence. We are to discuss today—the possibility of cooperation with the day nursery, the visiting housekeeper, and the visiting nurse. The mutual aid between the home economic department and the nursing profession is the hope of the future if we are to reduce the high rate of infant mortality. "Every day in the year an average of 142 babies is born in Wisconsin. The deaths among children under one year of age average fifteen per day. This gives a death rate for children under one year of age of 105 for each 1,000 children born, while the average annual death rate for the entire population, including persons of all ages, does not exceed 12 per 1,000."

Wisconsin is well provided with vocational schools. There is an opportunity for close affiliation work, so that the final death rate

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may be reduced. We are not so proud of our record in this state, and yet in comparison with other states it is not so bad. We know there is a great field for active work and the people who must be taught are the future fathers and mothers. I regret that the courses are not taken by both men and women—if this phase of the work develops we may be able to have in connection with our college courses more intelligent men and women who really make for public opinion.

The possibility of carrying the college work to the field has come to us largely through the work of one of the best known physicians in this country, Dr. Dorothy Reed Mendenhall, well known to the medical profession, who will now speak to us.

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WORK OF THE EXTENSION DEPARTMENT IN EDUCATING THE MOTHER ALONG THE LINES OF PRENATAL CARE AND INFANT HYGIENE

DOROTHY REED MENDENHALL, M. D., University of Wisconsin, Madison

The University Extension movement in England began with the idea of educating the working man along the lines of the general college curriculum, in order to give him the opportunity of an education at home. The dissemination of health teaching through extension work has been of more recent development.

The work of carrying health knowledge into the homes of the people was begun at the University of Wisconsin about four years ago. Since then a number of other universities have taken up this form of extension work, while the United States Agricultural Department, under the Smith Lever Act of 1914, has begun to develop such teaching all over the country.

Like all the early work for the prevention of infant mortality, emphasis was put on the care and feeding of infants in the first extension work done in Wisconsin, while the more essential teaching of prenatal care was almost entirely ignored. In our very first talks and consultations with these rural mothers, we discovered that the points they wished discussed were largely obstetrical. Questions on the causation and prevention of miscarriage, on lack of sufficient breast milk, milk leg, childbed fever, or why babies died at birth, were constantly being asked.

The importance of the care of the mother during pregnancy, labor, and lying-in began to appear as apparently the most influential factor in the death of rural babies. Prenatal care is now acknowledged to be the chief means of saving our infants at birth and during the first month of life; and we can only estimate its importance on the vitality of those who survive their first year. In time, we shall go further in our prenatal teaching than the beginning of pregnancy. In order to safeguard maternity, we should see that girl children, the prospective mothers, are kept sound in body and mind, and that their reproductive possibilities are not injured or impaired by improper care or contagious diseases in childhood. When this is done, pregnancy may again be a normal physiological function.

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The interests of this Association show a similar development. The emphasis of the papers in the beginning was on milk, feeding questions and urban problems—now the training of the obstetrician, prenatal hygiene, and rural conditions are taking their proper place.

Before I describe the actual form in which our health teaching has been given, I would like to call to your attention certain conditions prevailing in Wisconsin, which are probably typical of the large Middle West. Wisconsin is a large, prosperous, agricultural state. Sixty per cent of the population live under rural conditions. The people come of healthy, vigorous stock, largely northern European in origin. We have a low total death rate, and even a low infant death rate, but a high death rate the first weeks of life. As one health worker put it, "If you could survive birth, Wisconsin wasn't a bad place to live in."

In 1915, 53 per cent of the deaths under one year (exclusive of stillbirths), occurred the first month, 38 per cent the first week and 25 per cent the first day of life. Also during this year, over four-fifths of the deaths the first month were natal or prenatal in origin, 34.6 per cent being due to prematurity alone. Stillbirths and miscarriages are also high in the state, although we have no reliable figures for this class of deaths. More children died the first months of life in the rural districts than in the city districts in 1915. We believe that both the maternal and infant mortality at birth is higher in the country than in the city throughout the state, in spite of the fact that the country woman is sturdier, better developed muscularly and bears children more easily than the average city woman.

From our personal experience, we have found the reasons that the chance for the baby and his mother are less in the country depends on two main points—ignorance, and the hardships incidental to isolation and pioneer conditions. Ignorance is of course not limited to rural districts, but there are at least greater opportunities for enlightenment along health lines in the city. The ignorance we most often meet is on the following points:

1. Ignorance of fathers and mothers that their own health and right living is reflected in the health and vitality of their children.

2. Ignorance that the dairy cow is not the only animal which can be perfected by breeding. That the human young can also be bred true to type if the same principles are applied.

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3. Ignorance that the child can be as easily injured the nine months before it is born as the nine months after it is born; that overwork, lack of proper food and rest of the mother show directly in the size and vitality of the offspring.

4. Ignorance that the three great dangers of pregnancy: miscarriage, eclampsia, and puerperal sepis are largely preventable; that child-bed fever is simply wound infection.

5. Ignorance of the necessity for skilled assistance at the time of confinement, because pregnancy and labor are not always normal physiological processes requiring no special care.

The hardships still largely unavoidable throughout the Middle West are those connected with:

1. Necessary hard work of the country woman.
2. Lack of domestic help.
3. Isolation and distance from good doctors, nurses and hospitals.
4. Incompetence of many of the medical profession especially in rural districts.

The form that extension work along health lines has taken in our state during the last three years has been one of two, either lectures in the field or by correspondence courses. At the community institutes held in different villages and small towns in the state under the auspices of the Agricultural and University Extension, talks have been given on the care of the mother before and after confinement, and the hygiene and feeding of the young child. Other lectures on "Contagious Diseases" and "The Health of the Community" are also given. After the talks, the meeting is thrown open to discussion, while an informal consultation hour closes the conference, for those who do not care to present their problems in the open discussion. These talks are given usually to women, but not infrequently at evening meetings the question of the care of the child-bearing woman as a community problem is discussed and arouses much interest. Many times after such meetings, a postal card correspondence is kept up with one or more women, and babies are fed by mail, when other means of instruction are not available.

Also correspondence courses are offered by the Home Economics Department of the University of Wisconsin Extension Division on "The Care of the Prospective Mother," and also on "The Care of the Child in Health," and "The Care of the Child in Disease." These

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courses have been well received outside of the state as well as in Wisconsin itself, and are to be brought out in book form this year. The prenatal course aims to give the mother the necessary knowledge presented in a simple, usable way to enable her to keep herself in good physical condition while she is carrying her child, to safeguard her against miscarriage, and kidney complications. The question of confinement is reviewed, the selection of the physician and nurse discussed, as well as the unnecessary frequency of puerperal sepsis, and the need of rest during the lying-in period. Questions to be answered accompany each one of the eight assignments and the pupil is encouraged to present her personal problems.

The extension movement has been called by Miss Addams the "travelling settlement," and we have found it to be a ready means to arouse public attention to health problems and to educate isolated communities along these lines. In the Middle and Far West the extension movement reaches especially the rural and mining communities where other educational opportunities are entirely wanting. It is impossible for city workers to realize the difficulties presented by the infant mortality problems in rural districts.

We have only touched on a few of the more obvious needs. Extension work has proved itself one valuable means of educating the public to the need of meeting these problems and in suggesting ways in which rural conditions may be improved. There will have to be a general awakening to the importance of prenatal care, the need of good obstetrical attendance, and the value of rest in the puerperium if we are to save the present loss of life at birth, if our next generation are to be sturdy specimens and if the dangers now accompanying pregnancy and confinement are to be minimized in communities where hospitals, dispensaries, clinics, trained nurses, and even domestic help are unknown quantities.

Miss Marlatt: The possibility of training the girl in public school work so that she has not only theoretical knowledge and cultural viewpoint, but also practical knowledge to take into her daily life has been the desire of all of us.

Dr. Amy Daniels, who will now speak to us, is a New Englander. She has taught in New England and in the South and is now in the University of Wisconsin. She has had unusual opportunity through study and research in hospitals in Baltimore and Boston to speak from first-hand knowledge of the needs for better training in dietetics for not only the nurse and the college girl but also for the young physician in his medical course.

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THE RELATION OF BABY CLINIC WORK TO THE CLASSES IN DIETETICS

AMY LOUISE DANIELS, Ph. D., University of Wisconsin, Madison

Our present high percentage of infant mortality may be attributed to two fundamental causes, namely, poverty and ignorance. For the relief of the former we must have first, state aid for the overworked mother who is earning either part or all of the support of the family; second, insistance upon the enforcement of better housing laws; municipal collection of garbage and refuse; clean streets, alleys and back yards. For the relief of the latter—ignorance—we have many agencies at work, for example, the visiting nurse, infant welfare leagues, social centers, baby weeks, milk stations, free lectures, federal and state pamphlets—all to be had for the asking. And yet statistics show that there is but a slight decrease in the percentage of deaths among babies. The optimist of twenty years ago would have prophesied that, with all of these agencies at work, the death rate would be not 10 per cent of all babies under one year, but nearer 3 per cent. Why then have we failed? The explanation for our apparent failure—failure, however, only to come up to our ideal—is made obvious first by a visit to a baby clinic in one of our large cities, and second by a visit to any one of our small country towns, or very rural homes. In the cities a very large proportion of the parents of the babies visiting the clinics are "new comers." They understand neither our language nor our customs. The flies, the heat of the summer, the cold of the winter, and the contaminated milk are uncontrolable factors. The lectures, and pamphlets, and the infant welfare leagues are not for them; and unfortunately the visiting nurse comes frequently only after the harm is done and the baby is ill. At the clinic the doctor's directions are not well understood, and therefore, not in all cases well carried out; and there are too few people to do the follow-up work.

In the small towns the principles of infant care are frequently as little understood as they are among the people of the slums, and although living conditions are less crowded, and sanitary conditions

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may be naturally better, the statisticians tell us that the percentage of deaths among babies in rural districts is as great, if not greater, than in our large cities. In the majority of our small towns there are no visiting nurses, no infant welfare leagues, no free lectures; in fact, except in a very few cases, there is no one looking after the interests of the mother and her baby—only the doctor who comes when he must be summoned, for the expense of the doctor's visit is an item to be considered.

In the minds of most people poverty and ignorance invariably go together. But ignorance of the fundamental principles of infant hygiene is not found only in poverty stricken homes. In many of the moderately well-to-do homes we find little information concerning measures for preventing the transmission of contagious diseases, or the relation of the various foodstuffs to the health and well being of the several members of the family, least of all the baby, who, indeed, is little understood by rich and poor alike. In the so-called upper classes, as well as among the lower, the grandmother, or the neighbor or friend, who has had more or less successful experience with her own children, is often the adviser of the young mother. Too frequently the desired information is believed to be found on the label of the proprietary infant's food. Books are in demand among certain classes, but these are impersonal and do not in all cases fit the conditions. Even the college educated mothers are often unable to get from these books what they need, for with the added duties and responsibilities that come with the baby there is neither time nor the atmosphere that makes possible the concentration necessary for grasping from the written page all that needs to be known. This is inevitable, especially in the matter of food, since the feeding of the baby is largely a matter of individual adjustment.

Before our ideal—the saving of the 70 per cent of the babies who died from "preventable causes"—can be realized, we must teach all potential mothers in both city and country the principles underlying health and well being. The hope of the future lies with the teacher—more particularly the teacher of home economics. The first lessons in infant care should be given in the elementary school, not dirctly, perhaps, but indirectly, by using the baby at home as illustrative material in discussions pertaining to the hygiene of food, shelter and clothing. Lessons given here are lasting for they lead

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to habit formation in thought and action. In the high school and continuation school more specific work along this line can be given.

But the teacher of home economics should not confine herself to classroom instruction. Her duty to the community consists in doing something more than teaching the principles of home making to future mothers. She should be concerned as well with the homes of the present, and must be prepared to help in a very real and practical way the mothers, who, untaught, are trying to solve the problems of infant welfare.

In general the graduates of the home economics departments of our state universities, who have selected as their major subject food study, are well prepared to meet most of the questions pertaining to nutrition that present themselves. Their course in dietetics, taken either during the latter part of the junior year or in the senior year, has included the study of the food requirement of individuals under different conditions of age, work, climate, etc. Considerable time has been devoted to the needs to pregnant women, nursing mothers, and the dietetic requirements of young children. Since only those students are admitted to the course in dietetics who have had at least three semesters of chemistry, one of physiology, one of bacteriology, one of physics, and no less than two of food study, and in some institutions one of physiological chemistry, it is obvious that a fairly comprehensive grasp of the subject can be given. These students, however, would be much better prepared to help mothers and those responsible for the care of children, if we could give with our work in infant care and feeding actual practice in feeding real babies. It is inevitable that our work in dietetics, in so far as infant feeding is concerned, must be inadequate. Our classroom discussions deal with theoretical babies; our milk formulæ are prepared for certain imaginary conditions. Normal and abnormal stools and the relation of these to correct diagnosis are given considerable attention, but our only illustrative material is colored plates, which at best can give very incomplete pictures. Our present methods of training the food specialists are comparable to those of medical schools—if there are such—which are not associated with hospitals. The academic work may be good; the student may be able to relate all symptoms, co-existing conditions, and best methods of treatment, but unless he has had actual bed-side experience he cannot know, and

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only the most foolhardy would dare apply what he has learned in theory. So it is with our home economics teachers. They are able to teach the mother how to prepare the formulæ, and are well equipped with a long list of don'ts; furthermore, they are able to tell the mother when the doctor should be called, for too often she thinks diarrhea in a baby merely a digestive upset and no cause for alarm. But the home economics teacher hesitates, and rightly, to tell the mother what to give. If in our work in dietetics we are able to deal with real babies, we can send our students out prepared to prescribe formulae for the normal baby, as well as to know how to correct a mother's milk if it disagrees with the baby.

Such experience as our students need can only be obtained in a well organized baby clinic or hospital under the direction of competent doctors and nurses. Connected with the clinic there should be two laboratories, one a chemical and the other a milk laboratory. In the chemical laboratory the routine examination of urine and feces should be carried out, for it is only by knowing the composition of the excreta that the doctor or food specialist can determine what food material is disagreeing with the baby, or what metabolic disturbance exists. In the milk laboratory, milk formulae of various types should be prepared. Enough time should be spent in each laboratory for the student to become familiar with the technique of the various processes. In all cases the student should be present at the time of the examination of the baby, should know the diagnosis, what formula is prescribed and the fecal and urinary findings. The baby who is thus studied should be followed up in the home. Here the student teaches the mother how to carry out the doctor's orders in preparing the food and in the general care of the baby. Six or eight weeks of such training added to a substructure of the related pure and applied sciences will make it possible for the teacher of home economics to direct intelligently and successfully the feeding of young children. A few successful feeding cases in a given community will give opportunity for a very great educational propaganda, and the lessons in sanitation and infant hygiene which we as teachers now have opportunity to give only in the class room to future mothers, can be given to the present mothers in the home. The food expert will be consulted in many cases which now go unadvised until a disturbance of a more or less serious nature makes a visit from the doctor necessary—and sometimes the doctor comes too late.

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It should not be concluded that because we have referred so often to the fact that the student must be able to prescribe milk formulae, we are neglecting in our teaching the importance of breast feeding. The care of the mother and the relation of mother's milk to the well being of the baby are not neglected. This work, however, can be done in any well equipped dietetics laboratory. But no dietetic laboratory, be it ever so well equipped, can take the place of the baby clinic, in our work.

DISCUSSION

The Chairman: In Wisconsin where the extension worker must cover enormous distances for the sake of economy it has been imperative that each worker be able to speak intelligently upon many subjects. Often the women who come to these meetings bring questions that are impossible to answer. The extension worker must be able to direct such inquiries to proper sources and under all circumstances, as far as wisdom lies, create an intelligent demand for better health conditions in rural communities. While a short observational experience in any subject does not qualify the individual to handle the new subject, it should make her better able to present her own special work in relation to the problems in the field, and lead her to co-operate with agencies in other fields to the best of her ability. Miss Boeing, of the University of Wisconsin, whose work in extension is on the textile and clothing side of home economics teaching had the opportunity to do some observational work in Chicago and Milwaukee in connection with hospital and dispensary work where nurses are trained for better field service. She will outline what this brief period has meant in aiding her to see her special work in relation to other agencies.

Baby Clinic Work and Hospital Experience As An Aid to the Extension Worker

Miss Agnes Boeing, University of Wisconsin: An extension worker comes in contact with the people as one who endeavors to help solve their everyday problems of food, clothing and care of the family in general. This intimate contact with the family life of the community (for she not infrequently is entertained in the home during her stay), together with the fact that her visits often come periodically, is the basis of her value as a co-operator in this national health campaign. Realizing the necessity for definite experience in hospital and dispensary care as a background for the appreciation of the inter-relation of many of our problems, arrangements were made for me to undertake observational work at the Chicago Lying-In Hospital and the Milwaukee Children's Hospital.

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The benefits to be derived from even such a brief period of hospital observation study are many. While, of course, it does not fit a worker for the privilege of nursing, it does give her the intelligence to recognize the need for medical care and the knowledge to direct to the proper aid those who need help.

Children of the cities who are born with deformities that need correction, or hereditary tendencies toward disease that require constant vigilance and often hospital care, are discovered by visiting nurses and school health inspectors and cared for. The children of the rural communities in similar circumstances have no such opportunities.

Apparently then, the only solution is to educate the rural population to a realization of their needs, and thus create a demand which will result in better conditions. Any extension worker who assists in this educational campaign must have the background which will enable her to arouse an intelligent interest and direct public sentiment to the demand for and the proper utilization of rural nurses, county hospitals or whatsoever remedy the circumstances seem to indicate.

If a short experience of this kind opens such possibilities for increased co-operative efficiency, would it not prove worth while to offer a similar opportunity to others who are fitted to do the work? This would pave the way to a closer work between Home Economic Departments and Hospital Training Schools which could only result in mutual benefit as well as a speedier solution of rural health problems.

The Chairman: In opening the papers for discussion, the following should be emphasized: First, the possibility of co-operation between the courses in the colleges and high schools and the work in the hospitals, co-operation in the way of lectures and demonstrations, so the girl of the future will know more of the things she needs to know for her future development. Second, the possibility in extension work of carrying knowledge into the field either through home economics workers or rural nurses. Third, the wisdom of the suggestion that we have hospitals in every county in the state. More important yet is the last point, the one brought out by Miss Boeing, that there is a possibility of the college woman going in for hospital work for shorter periods than the required three years for graduate nurses, namely, the introduction of co-operative courses leading to the college degree and the nurse's diploma.

Dr. A. B. Emmons, 2nd, Boston: There is one point I wish to bring out, which I think was not mentioned in the report, and that is that this year Simmons College has opened a course and has a new professor of public health nursing, and that the course is given in connection with the Instructive District Nursing Association of Boston. I was asked by the head of the Infants' Hospital to give a lecture to a class in Home Economics from Simmons College on my particular hobby, "Prenatal Care." I think those facts alone are suggestive enough. The main point, however, is that Simmons College, Boston, is making connection with the Infants' Hospital. The Infants' Hospital has been established for teaching purposes, of course directly teaching medical students,

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and secondarily teaching nurses; they welcome this course and feel that they are carrying out the purpose of the Infants' Hospital in giving these courses for the girls at Simmons College.

Miss Helen W. Kelly, Department of Health, Chicago: I would like to say as to the necessity for women spending four years in college and three years in training, that we had in our National Nursing Organization a committtee on college affiliation, and the arrangement was to allow women who have had the scientific course in the university a shorter period of training.

Dr. Florence Sherbon: You may be interested in hearing about a little experiment in connecting the public school with the hospital which came to me through my sister who teaches in a Los Angeles school, and who has a class of 25 girls in physiology. A year or so ago, she and the attending school physician together decided to give these girls an experimental course in preparing for motherhood. It was purely experimental, but it seems to me that the success demonstrated what I have always believed—that we are losing valuable time in not giving the proper training for motherhood. These girls were taught regarding the proper functions of their own body and the proper care of themselves. A pig's uterus was dissected before them, and they were taken on trips to the county hospital, and to the baby wards, where supervising nurses gave them demonstrations in the care and feeding of the babies. They were also taken to clinics and to the milk stations. At the close of the year they were asked: "What do you consider the most valuable subject you have studied this year?" and without exception these 25 girls named this course as the most valuable. They were also asked to give their reason why. One, I remember particularly, said, "My mother never talked to me on this subject, but after she knew that I received this instruction in school the barrier was broken down between us" A number of the girls said that their mothers were grateful because the course had been given. It was a success in every way.

In regard to hospital care for mothers, I don't want to go on record as disapproving this—it would be heaven for these rural mothers to be able to be cared for in a good obstetrical hospital—but it will be a long time before they can avail themselves of this privilege.

We went into homes this summer where I could not see how a mother could be taken to the hospital or how she could be spared from home. We went into one country home where there was every evidence of a prosperous condition as far as the farm was concerned—there was something radically wrong with the family conditions. The mother told me that at one time she had been a school teacher but that she had made an unfortunate marriage and apparently lost hope. She had two lovely children. In going further, a neighbor who had attended this woman in her last confinement referred to the case, and asked me if I had been to this particular house. She said that she was there when the baby was born, and that the only piece of bedding or rag of any kind that that woman had on her bed was a horse blanket that was brought from the barn and still smelled of the barn. She went back the second or third day and the woman

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was sitting up in bed with a board before her mixing biscuit in the best way that she could for her family. A county hospital would not meet that woman's requirements. We went into hundreds of homes where the mother held the home together, where her supervision of the home could not be spared for an hour, even granting that the children were large enough to do the work. It is a serious question and one demanding the gravest thoughtfulness and planning and care on the part of social workers in this as well as other states. As I see it, the solution must be in the visiting nurse for the rural districts.

Mr. E. L. Burchard, Chicago: I am satisfied that neither the extension workers nor the visiting nurses are going to accomplish this education on infant mortality until they get the cooperation of the people among whom they work. In the Bohemian and Polish districts of Chicago, there is a high rate of infant mortality. We tried the experiment of taking the Public Health Exhibits from the city club out into that district, and secured the cooperation of the teachers of physiology, the freshman and other classes in the high school. We had a week's celebration on Public Health, and 33,000 people came to see the exhibit. The children acted as explainers and interpreters, and you should have seen them take their fathers and mothers and friends from one exhibit to the other and explain to them what they meant.

This last winter we secured a hall in the community, and the working men and their wives and their children came—this hall was in the heart of the district. Now we have organized a Public Health Committee, Bohemians and Poles—we secured the cooperation of the local medical people, and it is giving the best kind of training to the community.

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RURAL COMMUNITIES

AND

NURSING AND SOCIAL WORK

Saturday, October 21, 1916, 9.30–11.30 a. m.

JOINT SESSION

Chairman, DR. DOROTHY REED MENDENHALL, University of Wisconsin

COMMITTEES

RURAL COMMUNITIES

Chairman, DR. DOROTHY REED MENDENHALL, University of Wisconsin

Miss Elizabeth Kelley, University of Wisconsin
Miss Lydia Holman, Altapass, N. C.
Dr. Frances Sage Bradley, Federal Children's Bureau, Washington, D. C.
Dr. Wm. A. McKeever, University of Kansas
Dr. Henry M. Bracken, Minnesota State Board of Health

NURSING AND SOCIAL WORK

Chairman, MISS ELISABETH SHAVER, Louisville

Acting Chairman, MISS HARRIET L. LEETE, Cleveland

Miss Minnie H. Ahrens, Chicago
Miss M. L. Daniels, New York
Miss Nan Dinneen, Milwaukee
Miss M. F. Etchberger, Baltimore
Miss Mary A. Jones, Boston
Miss Zoe La Forge, Detroit
Miss Estelle L. Wheeler, Washington.

TOPICS

Home Problems of the Rural Woman

Problems of the Rural Mother in Infant Feeding

Rural Nursing

STATEMENT BY DR. MENDENHALL:

The creation of a new committee on rural communities shows the appreciation this association feels of the fact that the problems of rural child welfare are somewhat distinct from those met with under urban conditions. In spite of the fact that the rural districts in the South and West represent the majority of the population, the needs of the rural woman and her child have but slowly shown themselves and hitherto have been little studied or understood.

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It is especially fitting that the committees on rural communities and social and nursing work should hold a joint meeting for the improvement of rural conditions depends very largely on that great modern missionary, the visiting nurse, and it is to the country visiting nurse, I believe, that we must look for the ultimate solution of our rural health problems.

In Wisconsin, as in many other states, the extension movement has been interested in studying the conditions and needs of the rural women, and in educating the rural woman in her possibilities as homemaker and guardian of the household, as well as arousing her to the necessity of safeguarding her own health and that of her offspring by proper care of herself during pregnancy, confinement and the lying in period.

To get in close touch with country people, to present new ideas in a tactful yet impressive way to isolated communities, takes a certain type of personality, besides a sound scientific knowledge of the subject to be presented. If there is any place where individuality counts it is in rural work. Wisconsin has been most fortunate in the past two years to have at the head of the agricultural extension work in the state Miss Elizabeth Kelley, who came to us from work in Louisiana, and who has a most unusual knowledge of the needs and problems of the rural woman. Miss Kelley will speak to us on "Home Problems of the Rural Woman."

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HOME PROBLEMS OF THE RURAL WOMAN

ELIZABETH B. KELLEY, University of Wisconsin, Madison

A "bright healthy country lad" is an expression as familiar to us as the "puny sickly children of our city slums." That the country is the best place to rear the children from the standpoint of health is clearly shown by the mortality records, but these same records also show that the death rate among infants from birth to one month is greater than it is in our large cities. This is mainly due to three causes: the poor grade of country doctors, lack of trained nurses and lack of domestic help.

At the time of childbirth the city woman can either remain in her own home and employ a competent physician and trained nurse, or she can go to some well equipped lying-in hospital. This latter course seems to be growing in favor, mainly because of the excellent care given at these hospitals, the attendance of a specialist in obstetrics, and the respite from household worries; but the rural woman, and in speaking of the rural woman we may exclude those living near cities or large towns because they can avail themselves of the medical help of the cities, with but few exceptions, must rely upon the services of the country physician who is often young and unskilled and frequently hard to locate at the time of need, or upon a midwife who frequently has had no training and who does not understand the simplest rules of sanitation. In many cases the child is delivered by the help of a neighbor, or the woman's husband.

In my work among the rural women I always ask who attended at the time of childbirth, and even I, who am prepared for the report I am to hear, am surprised to find that family after family of five and six children have been born without help except from the father and older children.

The farm woman is an indispensable part of the farm establishment and she feels that while the family could afford the expense of sending her to the hospital at this time, her supervision cannot be dispensed with at home. She is head of the commissary department and if she is incapacitated the running order of the farm plant is weakened at its most important point, and because the present needs are so pressing the farm woman will sacrifice her health and the health of her child by getting up two or three days after the child is born. Women have told

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me time after time, when I asked why they did not remain in bed longer that the "men just had to be fed."

On resuming her household duties the mother finds so much work has piled up that she is obliged to work beyond her strength, so that the vigor that should go to nourishing the child is given to the family washing, and in consequence the child must be artificially fed, either wholly or in part, and so at the outset is deprived of its inalienable right—to be nourished by its mother.

All over this country students of agriculture are demanding that the farm animals be bred true to type, that the young be so cared for and fed that the dominant characteristics of the type be developed—all for the sake of making them more productive and consequently bringing in more dollars to the farmer; but the farmers of this country will never be any more prosperous than they are today until they realize that the greatest leakage in the profits of the farm is in the frightful waste of strength and vigor of the mother and the loss of life and ill health among the children. A protracted illness or death of the wife will eat up the farm profits of two or three years.

It seems rather mercenary to turn this subject to the profit and loss column in the farm account book, but only in this column can we measure it. There can be no measure put upon the anguish that her loss brings to the household nor upon what her children lose in character building by being deprived of her guidance.

There is one point I should like to bring out here. The most insistent demand is made of all workers in rural subjects that the boy or girl be kept on the farm. All manner of schemes and allurements are being inaugurated to this end. To me the secret of keeping the boy and girl on the farm lies in the health and contentment of the mother. Boys and girls leave the farm during their adolescent period. That period of life during which their imaginations are the most lively, their ideals of life the most exasperated. If the mother is broken in health, if her nerve force is gone, if the hardships of her early life are upon her, it is impossible for her to guide with a firm, steady sympathetic mind the turbulent, riotous thoughts of her boy and girl. She is prone to complain of her own trials, and wish her offspring a better life than she has had, and to the farm woman this always lies in the path of the city. So if we are to keep our boys and girls on the farm we must remedy the evils that attend upon childbirth in the country.

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The remedy for the first two causes, namely, poor physicians and lack of nurses lies with the medical profession, but the last, teaching the mother how to care for herself during pregnancy and at childbirth, is the province of home economics.

The farm woman can no more remedy the lack of domestic help than the farmer can remedy the lack of "hands" on the farm. Like him, she must turn to power machinery to solve her problems. The husband has the seeder, the planter, the cultivator, the mower, the reaper, all run by power, so the wife must have first of all running water in the house and a bathroom. In the South most women are afraid to step from their own doors into the yard after dark, and in the North where there is sometimes as long as three or four months when the ground is frozen pregnant women dare not trust themselves to cross the yard. I need not dwell upon the evil effects of this lack of toilet arrangement in the farm house. They are too apparent to the people who understand the evils.

After the running water will come the washing machine, lighting plant, vacuum cleaner, dish washer, meat grinder and bread mixer.

She must learn to make machinery, guided by her brains, do the work that a dozen human hands cannot do.

In every state there are four or five, often more, agencies where the farmer can apply for men to help out in the harvest season. These same agencies ought to keep on their lists the names of women who will act as domestic helpers, the names of practical and trained nurses, all of whom will be willing to go to the country and help the farm woman out at times of greatest need. In Wisconsin the bankers association has offered to be such an agency for the farm women. In some of the banks a notice is posted saying that the bank has a list of such names. This, to me, seems to be a step in the direction of immediate relief.

I feel that it is just as necessary and even more necessary that a campaign of education be started among the farm men as among the farm women. Both must be made to realize that the rearing of children is a fifty-fifty proposition and that it is their patriotic duty to give to the state a race of boys and girls, strong and healthy in body and mind and the quickest, most logical way to do this is to care for the woman during the child-bearing period.

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This work among the rural women is not only the concern of the people actively engaged in agriculture and agricultural problems, but it is the concern of the nation, because no nation can be prosperous if the lands that produce its food and clothing are unproductive, and no land can be productive that is not presided over by a strong, intelligent body of farmers. There can be no strong, intelligent farmers if the child-bearing woman is neglected.

The Chairman: Outside of New York and New Jersey, Ohio and Kansas are the only two states in the Union which have created departments of child hygiene, showing their appreciation of the need of the study and conservation of child life. Kansas is the only state west of the Mississippi that has indicated in this way the importance of the care of the infant to the state.

As this meeting is to be devoted to the study of rural conditions, the question of the problems presented by the infant feeding in the country is one that suggests itself for discussion. Not all mothers even in the country are able to nurse their own children, and certified milk and skilled medical assistance are equally rare in rural districts, so that we know Dr. De Vilbiss will have many interesting points to give us in her paper on the "Problems of the Rural Mother in Infant Feeding."

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PROBLEMS OF THE RURAL MOTHER IN INFANT FEEDING

LYDIA ALLEN DeVILBISS, M. D., Director, Division of Child Hygiene, State Department of Health, Topeka, Kansas

A review of the bulletins written for mothers on the care of infants, especially on the subject of infant feeding, would give one the impression that they were not intended for use outside of city limits. For in this literature the two points of infant feeding most emphasized are the value of breast feeding verses bottle feeding, and the use of certified milk properly modified and kept on ice.

Our observation and experience has been that breast feeding versus bottle feeding is not one of the vital problems of infant feeding for the rural mothers, as undoubtedly it is in the cities, as from 75 to 90 per cent of the rural women in our state nurse their babies for the first six months at least. Also properly modified cow's milk kept on ice until feeding time is out of the question for the great majority of them for it is only the exceptional farm home which can provide ice.

It would be interesting to examine the factors which determine the larger percentage of breast feeding in the country than in the city, but chief among them undoubtedly are:

1. The work of the country mother is largely in the home. Hence she is available for regular periods of nursing.

2. If the country mother leaves home, usually she has to go so far that she takes the baby with her.

3. The country woman lives a less artificial and a more simply natural life than is possible for the woman in the city.

4. Bottle feeding is not suggested to her by the example of her neighbors.

5. There is no obliging doctor around the corner who is willing for a fee to assume the responsibility of artificially feeding her baby.

For these and perhaps other reasons the great majority of babies in the country are breast fed. But this breast feeding is not always

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successful. Complicating factors are:

1. There is likelihood of weariness of the mother from overwork or from arising too soon after delivery.
2. Injudicious diet of the mother.
3. Lack of fresh air and proper exercise for her.
4. Lack of proper mental stimulus and freedom from worry.
5. Irregular intervals and improper methods of nursing frequently followed by the so-called three months' colic or other form of indigestion and often taken as an indication that the milk is not agreeing with the baby.
6. Failure to weigh the baby or weighing only at very irregular intervals.
7. Nursing the baby after the first birthday, sometimes until the second.

These problems are not difficult of solution. And it will be only a question of time at the present rate of dissemination of information regarding the feeding and care of infants until the necessity for proper nursing and methods will be matters of common knowledge.

It is the problems of bottle feeding and feeding of the child after the first year that present the most serious difficulties in rural infant feeding. These problems might be grouped under three headings:

1. Infant food other than milk.
2. Milk and its care.
3. Table food after the first year.

In the better rural districts the problem of infant food is solved by keeping one or two cows for the express purpose. In many other districts patent or ready-prepared foods are in great favor. The foods most frequently used are those advertised in the lay press. The comparatively high price of these foods; the alluring advertisements; the full directions for preparing them and for infant feeding; the lack of proper information as to their relative lower food value as compared with cow's milk; the father and mother love desiring the best for their baby, together with their lack of facilities and knowledge of the technique for feeding cow's milk are all factors in promoting the use of patent or ready prepared foods in rural districts.

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But if milk is decided upon to be used for bottle feeding, immediately other problems present themselves.

1. Healthy cattle.
2. Proper handling of the milk.
3. Lack of ice or proper methods of cooling and keeping.
4. Lack of convenience and knowledge as to how to modify milk for infant feeding.

The health of cattle, especially as to freedom from tuberculosis, is not one of the serious problems of rural infant feeding as it is in the city. Dairy cows are tested for tuberculosis when milk is to be sold in cities having milk inspection ordinances and their enforcement, also when cows are to be shipped into another state. There is no general provision for testing cattle in rural districts where milk is used for home purposes. But in the judgment and experience of our State Dairy and Food Commissioner it is a rare thing thing to discover a cow suffering from tuberculosis where only one or two cows are kept on one farm and those kept most of the time in the open pasture.

Proper handling of milk can be summed up in the statement that a "clean man can produce clean milk anywhere." Clean milk is not a problem of fine dairy barns and elaborate equipment, although these may be a great convenience, but the essentials may be carried out anywhere. These are proper care and cleanliness of cows, stables, milkers, pails, cans, the removing of the milk at once from the barn to a separate cooling and straining room, and the quick cooling and the keeping cool in properly sterilized vessels.

The lack of ice perhaps is the most serious problem of bottle feeding in the rural districts. Methods of cooling without ice depend on the radiation of heat by draft of air or moisture. The rural woman takes advantage of this by keeping milk in the cellar, in the spring or sod house, or suspended in the well or cistern. All of these methods are open to the objection that they fail to keep milk at a sufficiently low temperature, and that they are unhandy and troublesome for the mother. For the latter reason milk is frequently left in the hot kitchen. The open well method is open to the serious objection that it is likely to result in a contamination of the water supply.

In many parts of the United States and in the southern part of our own state, ice does not form sufficiently thick in winter to enable the people of these districts to cut and store their own supply, and

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hauling artificial ice is out of the question. Undoubtedly some time in the not distant future, artificial refrigeration plants for private homes will be manufactured and installed as lighting and heating plants are installed now.

For immediate use we are recommending the use of a circular dry well from three to four feet across and from six to eight feet deep. This is lined with brick or cement. It is located just inside or outside the kitchen foundation wall and is connected with the kitchen by means of a dumb waiter having shelves of wire netting. Such a cooling well can be constructed often by the home carpenter at the cost of only a few dollars. It serves not only to keep the baby's milk safe, but it will care also for the entire perishable food supply. The saving of such food each summer undoubtedly will pay for the installing of this convenience to say nothing of the saving of the energy and strength of the farm wife and mother.

With a satisfactory milk supply and provision for keeping it safely assured, the next problem is the proper modification and formulas for each individual baby. For the rural infant this is likely to be a matter of no small concern.

It is a fact that the average practitioner who graduated anywhere from ten to twenty-five years ago did not receive instruction in the feeding and care of normal infants, particularly as compared with modern methods. The doctor's function was considered then, as it is all too frequently now, to diagnose and to prescribe for illness. The medical student of those days did not see normal babies in the clinics or practice, and he had no opportunity for observing and feeding them at various stages of their development. Hence unless the practitioner has had experience with a family of his own or has had children under his immediate care, unless he has taken frequent post graduate work or has been a close student of current medical literature, he is not expert in writing formulas for bottle-fed babies and he will find difficulty in outlining diets for very young children. In extreme cases some physicians have been reduced to the expediency of ordering condensed milk and instructing the mother to read the labels on the cans.

But granted that there is available in a rural district a man eminently equipped to give instruction in the feeding of infants and children, we are confronted with a still larger problem.

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The public has been educated to go to the doctor and to pay him for medicine and not for advice. Also it takes time to teach a mother how properly to prepare formulas and diets and the average busy doctor hasn't the time. If he took the time, in all probability, he would not be paid or thanked for it. Therefore, in the average community, it is easier and quicker and is the means of a better immediate income for the doctor to send the baby some medicine for the colic or for the diarrhoea than it is to go painstakingly into the cause of these ailments. And some wise country doctors keep on hand some harmless colored sugar pills to give for the dollar and give good advice gratuitously.

Frequently it happens that the country mother is too far away to send for a physician for an apparently trivial ailment—something which she expects will be better or all right in a few days. Or she feels that having him come so far is more than she can afford. Consequently she is strongly tempted to experiment with home remedies.

In some communities, too, particularly among the foreign-born peoples, a mistaken sense of thrift or ignorance of our customs prevents their sending for a doctor until the family and the neighbors have done their best, or their worst as it may happen, and the child is near death. There are certain districts where this practice is so prevalent that when a doctor is called to attend one of the children, he goes expecting nothing else than that he will have to write a death certificate.

The rural mother lacks the opportunity for the frequent consultation with public health nurses, teachers or physicians in the clinics or infant welfare stations which does so much toward simplifying the city mother's problems of infant feeding. Hence apart from her relatives and neighbors, the only available source of this sort of information for her is the magazines, which in the last few years have taken up the care of children as a part of their regular activities. Some of these articles of advice to mothers have been written by space writers and consequently are of doubtful value. But for the most part and especially in the first-class magazines, these infant's and children's departments are conducted by physicians and specialists. And these publications have performed a wonderful service for the rural mother.

Leaving the problems of breast and bottle feeding, the rural mother also finds special problems in the feeding of infants after the

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first year. Ordinarily she does not know how to take her baby from the breast or bottle and put him safely on table food. Consequently she experiments with tastes of this and of that with the usual result.

There is likely to be a scarcity of fresh fruit and green vegetables also and a too plentiful supply of fresh and salt pork. This makes it difficult to obtain proper material for a correctly balanced diet.

Outside of food and its preparation, there are a number of other problems which bear directly on rural infant feeding. Among these are:

1. Lack of facilities for the proper disposal of garbage and waste.
2. Unsanitary toilets.
3. Dirty barnyards and pigpens.
4. Rats and flies and other disease-breeding pests.
5. Pollution of the water supply.
6. Lack of conveniences in the farm home and difficulty of obtaining domestic help.
7. Lack of opportunities for consultation.

Perhaps the most serious of these problems is the lack of disposal of garbage and waste with all its attendant evils. The unsanitary slop barrel, the dirty pigpens and barnyards, and the unscreened, filthy toilets are a prolific source of rats and flies, with their possibilities of pollution of food supplies. The average rural toilet, which not infrequently is a miniature cess pool, also may be responsible for contamination of the water supply of the family or the neighbors.

The difficulty of obtaining domestic help and the lack of modern conveniences are vital problems for the rural mother. An over-worked mother cannot supply the proper amount nor quality of milk for her infant, neither can she take the necessary care and precautions with the baby's bottle when she is exhausted from too long hours or too heavy work. The lack of modern conveniences, especially a furnace and a properly equipped nursery, means that in the average farm home the mother must keep her young children with her in the kitchen. Here they are exposed to overheating from the kitchen stove both in summer and in winter; they are exposed to drafts and cold floors, to steam from washing and cooking; and they are placed within easy reach of sundry bits of indigestible food and stray articles which are surreptitiously swallowed.

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These problems of the rural mother in infant feeding, as outlined, have been the object of special consideration by national, state and local boards and officers of health, and together they are conducting almost continuous campaigns of Public Health Education on these and allied subjects. But of late we have come to the conclusion that our speakers, literature, exhibits and other educational measures were not reaching the mother confined rather closely to the home with little ones, and especially we were not reaching the more or less isolated rural mother.

To obviate this difficulty, our Division of Child Hygiene has inaugurated what we call the Mother's Confidential Registry. Expectant mothers and mothers of children five years of age and under register with us. They receive a series of nine prenatal letters and five birthday letters together with appropriate literature. They also write us freely as to their little problems, many of which we are able to solve for them or to refer them to the proper sources for medical or surgical treatment.

The prompt and eager response for this service leads us to believe that we are on the right road for solving, for a certain group at least, some of the problems of infant feeding and care for the rural mother.

The Chairman: In Dr. Meigs' splendid paper on rural obstetrics, she placed first in her plan of possible solution of the present rural horrors a county nursing service with headquarters at the county seat. The establishment of such a service is probably the most economical and effective first step in meeting the problem, but it must come step by step. The Anti-Tuberculosis Society which for years has been the great public health storm centre in Wisconsin was instrumental, two sessions ago, in causing the Legislature to pass the County Rural Nurse provision through which the county board of supervisors can appropriate money for a rural health nurse. Dr. Dearholt saw that the training of nurses for rural work must be undertaken if this new field was to be satisfactorily developed, and he was most fortunate in securing the services of Miss Olmsted, whose work in Illinois is probably well known to all of you, to start this special training and to supervise the visiting nursing in the state. Miss Olmsted is going to tell us of the scope of visiting nursing, its development, management and ideals.

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RURAL NURSING

KATHERINE M. OLMSTED, Supervising Nurse, Wisconsin Anti-Tuberculosis Association, Milwaukee

We have heard a great deal about the rural health problem in the last few days, and we realize it is not entirely a scientific problem, and that it cannot be viewed entirely from a scientific or even a medical standpoint. We have learned that ignorance causes the death of a great many babies and that many mothers die from hardship and overwork. But as the efforts of the rural nurse always have been and always will be directed by the medical profession, we are not allowed to iguore the fact that doctors are still finding that disease germs cause deaths in babies and in the mothers as well as hardships, overwork and improper feeding.

The rural nurse must be, beside a nurse, a teacher and a social worker. She is perhaps—and it is usually the case—the first social worker in the rural community. Her greatest work is the prevention of disease and the best way she can accomplish this work is by getting it into the rural schools.

We must not think and believe that all the infants die at birth from bad home conditions. We must consider that a few of the babies crawl over that infant dead line, but that the same conditions which kill so many of our babies in the rural districts are also maiming and crippling hundreds and hundreds of other children who are going to the rural schools, who are going to schools that are not properly ventilated, that have not the sanitary conditions they ought to have, that lack a good many of the things our city schools have found so necessary to protect the health of our children. The rural nurse's work is not entirely with the mother or with the infant, but with every problem of the entire community.

I think that all of us, nurses and social workers alike, feel that the problem of the small town and the rural district is the vital problem of the present time.

The fundamental problems of the big cities have been solved to a certain extent and rural and small towns are calling for help. Housing conditions are often worse in a small factory town than are per-

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mitted in cities having serious housing and tenement problems where active effort is made by communities to improve conditions.

Food and milk are distributed in unclean stores and utensils, the overcrowding is frequent and greatest in small cheap houses of the lumber camp or factory town. Things regulated by community control do not exist in rural districts.

Prevention of disease is a business proposition to bring results; the organization must be built upon a business basis with men and women in charge who are trained in the business. Short of that, we can never hope to get results.

We are protecting our laborers in industry. But the health of the laborer depends not alone upon personal discretion in the cure and avoidance of disease. The conditions under which he works must modify his own health. The movement of factory sanitation, for shorter hours of labor, for protection of workmen against accidents, for workmen's compensation and insurance are examples of the improvements taking place in conditions of labor. But to the farmer and his family health is perfectly natural and should come easy. He will not believe he owes anybody anything to keep his family well. It is hard for him to believe that many people are working on a plan to keep him well and that the only thing that protects him from the terrible diseases of the 13th century is because men and women have been sitting up nights working out plans for his protection.

Over wide stretches, rural sanitation has been neglected. Few precautions have been taken and few conveniences are at hand to safeguard human life and to meet human needs, and because sanitary supervision is nil, medical aid widely scattered, and roads poor, the evil consequences of such neglect is manifest.

Bernard J. Newman says: "The actual problem, therefore, is the education of the people of the rural areas to a keener appreciation of the value of sanitation. This must be the forerunner of any legislation, locally enforced. Such a compaign is perforce slow. It can be done with the rising generation through the schools. It can be furthered through the churches by lectures, exhibits and lantern talks. But the most effective work that can be done is personal and best done by the visiting nurse in her times of personal ministration to the work."

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The public health nurse has been called by Dr. Furstman, of La Crosse, the strongest link between the health department and the people; the arms of the health department. If they are, we wish the health departments in every state would watch over and supervise in some way what their rural nurses or arms are doing. They should be under the control of some state supervising nurse or doctor. At the present time it is not so. A community wants a nurse—it is usually a scarlet fever epidemic, or a scare of some kind that makes the mothers and fathers want a nurse so that the children can get back into school as soon as possible. The health departments have their full time health officers and their part time health officers, and they have, I believe, neglected one of the strongest factors of their health work in doing so little to help supervise the work and urge the necessity of the public health nurses.

We agree with Miss Kelley that the character of the home is of the greatest importance, and that it depends greatly on the mother and unless she is well and physically fit the home suffers. The rural nurse is well acquainted with the neglected home and the children of the invalid mother upon whom falls so many heavy duties, but she is also well acquainted with the fact that even though there were hospitals—as we have found out from our tuberculosis sanatoria, that it is a hard problem to get that rural mother, sick though she may be, to go into the hospital. She has her responsibilities and her children. Some way must be found to give nursing care to the mother in the home until she can be urged to go to the hospital. This condition will exist until there are hospitals enough so that the mother can stay within her own county and her children can be near enough to go and see her. Until we have such county hospitals, some arrangements must be made for the mothers who are sick, but as yet unwilling to go to a distant hospital. The aim of every rural nurse is to get the expectant mother under medical supervision as soon as possible. As a regular visitor and instructor in the home she is often able to make her realize the importance of having medical care and supervision during pregnancy. She is a valuable assistant to her in making the necessary preparation for the coming of the baby.

The foreign mother with whom the rural nurses frequently come in contact has for generations been accustomed to the midwife. She

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hesitates to call in a man physician, but bound to old customs and traditions, prefers to have a woman at the birth of her child.

She falls an easy prey to the visiting patent medicine man and the care of friendly but ignorant neighbors. We hear that the midwives take care of a great many of the mothers in these districts. The midwife ought not to be such a serious problem. I have found that the neighbor and the patent medicine man are a far greater menace to the rural mother than the midwife whom we know so well in the large cities. The rural nurse is a rival to the patent medicine man. It keeps her busy getting to the homes before he reaches them. The mother, when the baby gets sick, sends to the town or purchases from some visiting patent medicine man something good for the ailment and guaranteed to be a sure cure. It all comes back to more education to overcome ignorance. The rural mother will not, cannot go to the city to seek this education. The city must send it out to her to carry it into her home and explain it to her.

We feel that the rural nurse has a great value in this educational consideration. We all know, all nurses at least know, what Florence Nightingale found out many years ago through experience. "That the word that sticks is the word that comes after work." We feel that the nurse with her work in the home in the time of sickness, which is always an emergency, by going into the home at such a time and carrying her technical knowledge with her, her words bear a weight that other workers are unable to impress upon the mothers.

When, we think of the number of mothers and wives who are dying in the country of tuberculosis and typhoid fever, etc., the number of children dying of scarlet fever, measles and whooping cough and the number of babies, as we have heard here, who are dying from neglect and ignorance, we realize that we must carry on our campaign of prevention with renewed vigor.

To be well equipped for her work, the rural nurse must know many things besides nursing. County school boards may appropriate money for an assistant county superintendent of education, this person to be a nurse. Such a superintendent must hold at least a third grade certificate. So this ability to pass third grade must be added to many other qualifications of a nurse: normal school or college degree, three years hospital training, and public health training.

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She must of course have had some social training. She is often the first social worker in that community, she must have a working knowledge of the problems of the normal family in distress through ill health, the cause of poverty individual and social. She must have some ideas about the remedies for poverty, investigation methods of relief, indoor and outdoor relief, public and private, and institutions dealing with poverty, the housing problem, workmen's compensation, health insurance, mother's pensions, and all the numerous state and county agencies.

She must know how to gather vital statistics and make graphs and surveys and prepare exhibits.

All this she must know how to do besides her real reason for being in the community which is, and always should be, the nursing.

The foothold gained by nurses giving actual service in the home is the greatest asset in effecting social reconstruction in rural families and communities.

It has been said that 95 per cent of the infectious diseases are nursed at home by mothers. Probably the largest per cent of these mothers are the rural mothers, as 80 per cent of our population live in the country.

The rural nurse has been called the look out. She is more than that; she not only is trained to detect the signs of danger, but is well informed as to measures of precaution to prevent the spread of contagious disease and the busy farm wife not only needs the advice of the trained nurse but welcomes her assistance. It is a work that keeps the family together and pulls it through a critical stage.

Sickness is always an emergncy and imposes a large and unexpected amount of expense and worry on many who have not a large surplus. It is necessary to recognize that the proper meeting of household needs is often as essential to the patient's recovery as the nursing. No true woman can be comfortable if her household is going to pieces and her children uncared for. The same conditions which cause the death of thirteen out of every one hundred babies born throughout the civilized world leave more or less permanent stamp on perhaps two or three times as many more babies who somehow manage to crawl over the infant dead line, many of whom will be fathers and mothers of the next generation. Conditions which destroy so many of the young-

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est lives of a community must result in crippling and maiming many others.

Prenatal care must be taught to mothers, and practical instruction must be given to the little girls in the school room. A rural nurse's best work therefore comes through the school, where she must detect symptoms as well as physical defects, where she must teach the children lessons in hygiene and health.

Dr. Mendenhall has told us of conditions existing in Wisconsin, conditions which are typical of probably most of these mid-western states, that more children die at birth or shortly after birth in the country than in the cities of this state.

It is very true that no woman is comfortable if her household is going to pieces and her children are uncared for. The rural nurse that can go day after day to give the mother the actual assistance and nursing that she needs gains her confidence. She gives in this way a great deal of prenatal advice and general health instruction to the mothers, but her best work is in the schools. We have heard that ignorance, hardship, poverty, isolation, are all factors, and we know that the nurse is the great factor in overcoming ignorance. She is a great factor in overcoming the hardships too. I try to make the women want and demand what they need for their own health and the health of their children rather than ask their husbands to give it to them. I have great faith in an appeal to the woman.

In illustration of this point of what a rural nurse can do in a school, she can form her parent-teacher organization, she has no trouble in getting them there. Let her send word to the rural school teacher that she will be there on such a day to examine the children and will the teacher please send word to the parents—and usually before the nurse arrives, at nine o'clock in the morning, all the mothers are there with all the children even the babies. The nurse examines them all and talks to them and after school has a meeting for the parent-teachers in order to get some follow-up work. These meetings at the school houses are very necessary, for if a nurse has a hundred schools she cannot get into all the homes, and by getting the parents to come to the school she can point out that Johnny's eyes need attention, and the various other ailments of children. The teachers often have to report the day after one of these meetings that the school is practically empty, so many children having gone to town to

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see the doctor. The question of school sanitation can be brought up at this time, too, and I think it has been found very effective to do so. Sometimes the men come in—we like them to come—but as a rule if a group of mothers meet in that little school house and some nurse points out that the wall paper has not been changed for fifteen years, that the windows are nailed down or barred like a jail and the doors open inward, great dangers in case of fire, that the blackboards are poorly located, that windows are in the front of the room, that the children have defective vision in consequence, or where in other school you point out that the ventilation is bad and the school needs a jacketed stove, you will find that they will go straight to work, to the board of directors, the farmers who are the trustees, and every time they get exactly what they want. The farmers so far have been very willing and pleased to have the women take an interest in the schools, and I think it is just about the same in the homes.

Poverty is always a puzzling question when you are confronted with it in public health work, but it has been nearly always the public health nurse in the county who has been the one person to urge the county to have a good overseer of the poor or a social worker to help meet the problem of poverty.

Isolation is a big problem, but it can be overcome. One nurse organized and visited all her county parent-teacher organizations, over one hundred, every year. Another nurse had a perfect mania for getting every rural woman to join some society, parent-teacher organization or Ladies' Aid of some church, then she federated all these little clubs, and had large meetings in the town in the center of the county and secured men and women of prominence come to talk to these rural women on subjects of interest to them.

There is the serious question of skilled assistance, but I think most tuberculosis workers as well as infant welfare workers believe that it is the nurse who first gets into the community by her study of vital statistics and her survey of the community and her ability to interest people in their own needs that will be the greatest power in getting whatever is needed, whether it is a full time health officer or a physician who will take the obstetrical cases or, even better, a well organized county health unit.

The rural nurse will stand well in the foreground in the future in this great campaign for better public health. She is an invaluable

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aid in health propaganda with her ability to carry into the home the trained nursing and technical knowledge learned in the hospital. She not only nurses the patient but teaches the family. As she looks around her in her work she sees life and its needless sacrifice and she can well realize how unnecessary is all the human wastage and suffering, all the infants dying and the crippling of little children as she leaves the medicine of education in every little home. Education is the means to overcome ignorance and ignorance kills.

DISCUSSION

The Chairman: I have always had a wholesome admiration and respect for the trained nurse, since my student days at Johns Hopkins, but I now feel, since hearing this paper, that the rural visiting nurse must be divine.

We need in Wisconsin a health center in every rural county where the rural visiting nurse may be found and from which her work will start; where social service for the rural district may be obtained; where an infant care and prenatal station can be maintained and where extension work along educational lines will find a natural beginning. It seems to me that this vision is possible of realization in the near future. Perhaps the first of these rural health centers may take its beginning from this week's program.

This meeting is now open for discussion, and I hope many health workers present will take part in it.

Dr. H. M. Bracken, Secretary, State Board of Health, St. Paul, Minnesota: It seems to me that the frontier rural work has been rather largely dwelt upon. A great deal has been said about Wisconsin. Minnesota is not unlike Wisconsin, and I know that in Minnesota there are only a few places where one is five miles away from a neighbor. The frontier problems are different from the rural problems; the rural problems bring out some of the points that have been referred to today. We have heard about ignorance on the part of the mothers, indifference on the part of the fathers, a suggestion that the father needs bringing up and that mother wants a hand in bringing him up.

It has been stated that the mother cannot get away to be properly taken care of at the time of the birth of her child. The first thing you want to do is to get away from that idea. It has been stated that the mother must get up two days after the child is born to work for the father. She doesn't have to. I was walking down the street last evening after listening to some of this talk, and I said, "I will bet there was not one of the women at that meeting who can cook a beefsteak better than I can." Some of these farmers used to keep house before they were married, and it would not hurt them to do so again temporarily. If a woman feels she must get up two days after her child is born to cook for the husband and father, she had better go somewhere where he cannot reach her. Then he will do his own cooking or hire some one to cook for him. As for not having conveniences or a nurse—well, we are getting the nurse. I was brought up in a little town where it was the hardest thing in the world to get help. There were times when I had to keep house.

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It is true that people do not have proper conveniences in the household; they take better care of the animals than of the humans. Someone must educate them away from that; mothers must be taught to ask father for things and not just drift along and take what father gives. As soon as they learn to do this there will be something doing.

A health center in every county is most important; the county nurse is going to be a help in bringing this about.

I hardly dare touch on the subject of hospitals, but I feel that the place for a woman to be confined is by preference the hospital, and if the only reason against this is that she cannot be spared from home that is the more reason for her going.

The Chairman: I am delighted that Dr. Bracken emphasized the needs of a county hospital. I did not dare mention it by name, so I called it "health center."

I see Dr. Dearholt here, the power behind the throne of our visiting nurse. I think he ought to say something to us.

Dr. Hoyt E. Dearholt, Milwaukee: While the papers were being read it seemed to me that I had a great deal to say, but as the meeting has gone along it seems to me all the things I had in mind have been said better than I could say them. In listening we have certainly realized that there is quite a little work to be done, and have also seen that we have a very complex problem in the country districts to deal with. It is more than a complex problem, it is a long series of problems. It ought to be clear that the solution of a number of different problems, varying from one another so greatly, is hardly to be found in any one simple answer. If we have a series of problems we shall probably have to look for a series of answers.

All of us in social work, as has been suggested, must attempt to be broad. That does not mean that we should be scattering in such a way that we fail to get results which can only be gotten by intensive work. In the activity of social workers there is this conflict of two ideals, we are to be broad on one hand and intense on the other.

I have never had much sympathy with the disposition that sometimes seems to be manifested on the part of social workers to be perhaps a little bit bumptious, to think that "my way" is the only way and that anybody who thinks in another way is an arch enemy. Somebody has given as an illustration of the negative in love, that "These people love one another like two social workers."

I would like to see the members of this organization get together and draft a prayer that every social worker should deliver daily:

Keep me hustling but humble, and deliver me
from becoming bumptious!

The Chairman: I hope Dr. Meigs will say a word, because I think we Middle Westerners are inclined to be bumptious, and perhaps she will tell us something of things a good deal better than we know.

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Dr. Grace L. Meigs, Federal Children's Bureau, Washington: I do not think I can fill as large an order as that, but I have a word to say about an interesting experiment being made in one of the southern states, North Carolina. Dr. De Vilbiss brought up the point that many country physicians have no training in the modern principles of infant feeding, and probably are not familiar with the most modern practice in obstetrics. Dr. W. S. Rankin, secretary of the State Department of Health of North Carolina, told us last year of an interesting plan of instituting a local post graduate course for country practitioners in the modern principles of infant feeding. We did not believe the plan would succeed because we thought busy country practitioners would not be able to attend the school, and perhaps would not be anxious to have someone from the city come to tell them about infant feeding. But he has put the idea into practice, and I hear it is very successful. He has carried on two traveling clinics. Each clinic is held in a different community each day in the week. There are classes of fifteen or twenty physicians, and we hear that more applications are made for places in the course than can be taken care of. This year they have carried on a course in infant feeding and children's diseases; next year the course will deal with obstetrics, surgery and other subjects.

The Chairman: We are inclined to emphasize frontier conditions, but we have other rural problems. In the East, though there is practically little left of rural conditions, perhaps Dr. Johnson will say something about the problems with which they are confronted in New Jersey.

Dr. Bertha F. Johnson, Chief, Division of Child Hygiene and Nursing, State Department of Health, Trenton, N. J.: We have rural conditions in New Jersey, though they differ from rural conditions in the West. There is no place in New Jersey much more than one hundred miles from New York City or Philadelphia. Some of our cities, which seem small by comparison with these large cities, would seem larger if they were out on the prairie. There is probably no place more than ten or twelve miles from a doctor, and most of the doctors have automobiles.

Some of our rural problems are the same as those in the West, and some are of a very different nature. In some of the villages during the canning season hundreds of women work long hours in the canneries and live under very unhygienic conditions. Children of such mothers are necessarily neglected, and such families suffer, not from isolation but from crowding and insanitary conditions.

Visiting nurses are helping to solve the problem in a number of the smaller towns, and the members of the New Jersey State Federation of Women's Clubs, who are actively interested in health work, have adopted as a slogan for the coming year, "A Visiting Nurse for Every 5,000 People."

Miss Van Kooy, Milwaukee: I would like to tell of an experience in the northern part of this state where I was employed as demonstrating nurse in a lumbering town consisting of about four hundred families. The doctor asked me to make a call in a home where a little baby was being taken care of by the

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grandmother. I found the grandmother, her husband, the father of the child, and one male boarder, living in three small rooms on the second floor of an old building. The woman told me the mother had died at the birth of the baby five months previous. The child was five months old and weighed nine pounds. I suggested speaking to the doctor and getting a formula for the baby and the grandmother consented. When I went back they were all there to see what I was going to do. They had a bottle of milk and I asked them to boil some water and to get some bottles. They gave me six empty patent medicine bottles, one of which we used. I started to prepare the formula and when the father saw I added water he said he did not appreciate water in milk and he did not believe the baby would. I persuaded them as they had not succeeded with their plan to try mine. Next morning I went back and the grandfather was home. He said the baby had cried all night long. They had been in the habit of feeding it every two hours and they thought as long as she had the bottle in her mouth it was all they could do. I asked if they had done as I had told them, and they confessed they had not. The baby was sleeping with the grandmother and the grandfather in one small bed. I prevailed upon them to have the child sleep alone; as they had an old baby carriage we used that. They had the windows closed and I persuaded the grandfather to have them open. The second night the baby slept better, the third night she did not wake but once and that was for the bottle. At the end of the week she had gained a quarter of a pound. The grandfather and grandmother, and, in fact, all of them were delighted and willing after that to do what I told them.

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NURSING AND SOCIAL WORK

Round Table Conference

Saturday, October 21, 1916, 2 p. m.

CHAIRMAN

MISS ELISABETH SHAVER, Louisville

ACTING CHAIRMAN

MISS HARRIET L. LEETE, Cleveland

Miss Minnie H. Ahrens, Chicago
Miss M. L. Daniels, New York
Miss Nan Dinneen, Milwaukee
Miss M. F. Etchberger, Baltimore
Miss M. A. Jones, Boston
Miss Zoe La Forge, Detroit
Miss Harriet L. Leete, Cleveland
Miss Estelle L. Wheeler, Washington

TOPIC:

STANDARDS FOR INFANT WELFARE NURSING

The Chairman: Miss Elisabeth Shaver, Supervising Nurse of the Babies Milk Fund Association, Louisville, who was to have been our chairman at this meeting, was prevented by serious illness from completing the preparations for the program. About two weeks ago I was asked to take her place, and in doing so, I have followed as far as possible the plans originally outlined by Miss Shaver.

In considering standards for infant welfare nursing, we are taking up our most vital question. Great opportunities are given to nurses in connection with the public health work for public health education, and people everywhere are turning to the nurses for instruction and leadership. The fact that we have not established well-defined standards, and have not a sufficient number of nurses prepared to do the teaching increases our difficulties. We must be alert and active and pull together in the effort to remedy these conditions.

In opening the discussion, I will ask Miss M. F. Etchberger, Supervising Nurse of the Babies' Milk Fund Association, Baltimore, to read an outline she has prepared on "Standards for the Infant Welfare Nurse," and will then ask Miss Jones to speak to us on "Infant Welfare Nursing."

Miss Etchberger then read the following outline:

Standards for the Infant Welfare Nurse
(The highest possible in education and character.)
Requirements for the Staff Nurse—
Education:—*Graduate* of accredited school
Registered preferably

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Personality:—Must possess some degree of personal magnetism in view of the fact that she will have to be teacher and adviser of the mothers as well as give sick care to the babies.

Must be sincerely interested in this special branch of health work; must possess tact: and have the gift of putting herself in another's place; must have the qualities of leadership.

Must be teachable

Must be able to receive and follow orders, but at the same time possess the initiative and resourcefulness necessary to cope with emergencies which may arise.

Requirements for the Supervising Nurse:

Education:—Graduate of accredited school, registered, with special training in

1. *Infant care*
2. *Obstetrics*
3. *General sanitation*—including dangers of contamination of local milk and water supplies, sources of local supplies, etc.

(This training should be obtained in training school before graduation, or in graduate courses in regular training schools, or in field work under adequate supervision.)

With working knowledge of

1. Local relief agencies; i. e., both the emergency sort and constructive relief; hospital social service, etc.
2. Local health department—its functions, scope and powers

Personality—Same as above.

In conclusion, Miss Etchberger said:

"Would it not be well to call attention to the action of the Pennsylvania State Board of Examiners for Registration of Nurses in including in the curriculum recently presented to the Training Schools in Pennsylvania, the recommendation that social service work be given nurses while in training? This would naturally mean the preparation for all forms of Public Health Nursing.

"Could not a recommendation of this kind be made by this Association to the State Boards of Examiners for Registration of Nurses, in other States?"

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STANDARDS OF INFANT WELFARE WORK

MARY A. JONES, R. N., Baby Hygiene Association, Boston

The reply of one of our great divines to an ambitious youth who wished to know how to become great was that he "must first choose a good father and mother to be born from." We cannot control heredity characteristics of present parents or grandparents, but if we do our whole duty toward the community, we shall necessarily influence both the physical well-being and the moral standards of future parents and grandparents.

There is little in medical, nursing, preventive or educational work, in the improvement of housing, sanitation, industrial or other social conditions, that does not have a direct or indirect bearing upon the development of the child. Boards of managers, doctors, nurses and other social workers must keep all this in mind, if the highest standards of infant-welfare work are to be attained. This is especially true of the nurse, who comes into very close contact with the family, particularly with the mother, whose influence over the children is greater than all others. What then should be the nurse's qualifications and training? We will assume that she has good health, the advantage of good moral and religious training, and at *least* a high school education; that she has a reasonable amount of sympathy, common sense, tact and judgment.

All this comes before the hospital training. The National Organization for Public Health Nursing requires its members to have had at least a two years' consecutive course, including the care of surgical, medical and obstetrical patients, in a hospital of not less than fifty beds. The average maternity hospital does not keep the baby much after it is two weeks old. The graduate nurse goes out to families and gradually acquires a certain knowledge of the care and feeding of infants, the value of her knowledge depending largely upon the ability of the doctors for whom she works. When these hospitals do any *prenatal work,* only a few nurses have the advantage of the practical training; the greater number are given only the theory.

Three years ago, at the joint meeting of the American Nurses Association, the League for Nursing Education, and the National

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Organization for Public Health Nursing, one of the round tables on infant welfare work sent in a request to the League for Nursing Education that more attention be paid to the teaching of pediatrics. Many schools have since given more theoretical instruction, and a few have affiliated with children's hospitals and so given actual work with babies. But why accept any theoretical work in this line when a practical training is demanded in every other? I truly believe that a good surgical nurse could, *if necessary,* meet an obstetrical emergency far better than the recent graduate from a lying-in hospital could care for a baby of six months. I am not saying this to criticise the present day curricula, for I am aware that the faculty find it difficult to arrange for the many subjects to be taught, but *pediatrics is altogether too important a branch to be neglected.*

Even when all these requirements are met by the training schools, and the nurse voluntarily takes a post-graduate public health course, or perhaps has done visiting nursing or filled some executive position very creditably, she is not always fitted by taste or temperament for "baby work." A nurse not long ago made the remark about one of her co-workers that she was a fine woman, had an excellent training, was careful and conscientious, but somehow had never been able to "get the vision." And certainly one needs the "vision" to be successful.

Logically infant welfare work divides itself into three branches:

(1) Prenatal work,
(2) Obstetrical and postpartum care,
(3) The care and feeding of the baby.

As soon as a woman becomes pregnant, she should be urged to consult her physician. If she has none and cannot afford to employ one, she should be directed to one of the prenatal clinics for examination and advice. After this she should be visited once in ten days by the nurse, who will keep in touch with her general condition. The directions given the staff of the Instructive District Nursing Association of Boston clearly convey the nature of these visits.

PRENATAL VISITS.

1. General condition and appearance.
   Color, cheerfulness, apprehension, strength, dyspnoea.
   Pain in back (belt)?
2. Swelling in face, hands, feet—varicose veins of legs, hemorrhoids.

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3. Nausea and vomiting. "Heart-burn." (Oil or cream one-half hour before eating.)
4. Headache. Toothache.
5. Vision, dizziness, blurring, spots or flakes before eyes.
6. Leucorrhoea. Blood?
7. Urine, at least one quart daily. Specimen, frequency, burning, painful? Sudden reduction in amount dangerous.
8. Bowels free? Flatulency. (1) Diet. (2) Fruit. (3) Enemata. (4) ℞ senna prunes. (5) ℞ cascara. (6) Co. liquorice powder.
9. Breast and nipples. Clean and dry? Lanolin if necessary. Did she nurse her other children? How long? or why not? Support if necessary.
10. Feel life after five months? If not listen for heart, locate and count.

GENERAL ADVICE TO BE GIVEN THE MOTHERS.

Before taking neighbor's advice, ask nurse or doctor.

1. Reassure with cheerful hopefulness of favorable outcome.
2. Fresh air and exercise, work in moderation only, better none toward end of term. Lying down twice daily. Bed early.
3. Clothing loose, corsets, none at all or loose. Belt for abdominal support if pain in back. No round garters.
4. Baths, daily, cool sponge. Sweating increased in pregnancy.
5. Food, mixed diet, meat only once daily. Not too much food. Never a large meal. Two lunches between meals. Plenty of liquids.
6. Water, 8 to 16 glasses (1 to 2 quarts) enough to yield at least 1 quart urine.
7. Baby clothes. These should be very plain. Most of them you can make yourself.

3 Dresses at $.17	$ .51
3 Petticoats (Gertrude design) at $.17, made of outing flannel, 1½ yards material for each dress, petticoat and nightdress	.51
3 Nightgowns at $.17	.51
3 Pairs Stockings at $.12½	.38
3 Shirts at $.25 each	.75
3 Bands, straight (flannel ¾ yard)	.23
3 Bands with straps, silk and wool (seconds) at $.25 each	.75
1 Baby Bunting Coat and Hood in one	.63
20 Diapers, 2 pieces 10 yards each at $.55	1.10
Total	$5.37

8. Supplies for labor.
   Besides the usual kitchen utensils and bedding have ready:
   2 pounds absorbent cotton.
   1 piece of oilcloth to protect the bed.
   A piece of castile soap.
   Plenty of newspapers.
   A clean piece of blanket to wrap the baby in.
   A clothes basket for the baby's bed.
9. Prepare mind for signs of labor and probable course, especially for first labor.
   (1) Urine. Color—normal, amber.
   If high or dark, too concentrated, drink more water.
   Specific gravity—normal, 1021.
   If 1025 or higher, too concentrated, drink more water.
   Acidity—normal, slightly acid.
   If very acid, too concentrated, drink more water.

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Albumen. Heat test and dilute (½-5 per cent) acetic acid, if a distinct cloud forms report to doctor.
(2) Blood pressure.
Normal 110-120. Lower is harmless.
Rise from individual average, report and watch.
Pressure of 140-160 report and watch.
150-170 investigate and treat immediately.
160-190 dangerous.
170-230 usual before or in eclampsia.

This is not all there is to prenatal work in its broadest sense. Surely no nurse would fail to urge the mother to select a suitable room for confinement nor to make home conditions as comfortable as possible while she is unable to look out for herself. Not enough is done, however, to interest the father in the coming event, and too often he is made to feel that he can best assist by his absence.

When the patient is not to be confined in the hospital, there should be as complete an outfit as possible in the home, and someone to care for the house and other children. As a rule the visiting nurse does not go with the doctor at the time of confinement, but follows the next day to carry out his instructions. This has always seemed to me to be a mistake. While obstetrical nursing in the home will entail a far greater outlay of money, I believe the midwife question with all its evils will never be settled until this problem is met. If ever a woman wants the presence of another woman it is at a time like this. The competent physician will welcome the assistance of the nurse, while her presence might stimulate the inferior one to do better work.

When the patient has been discharged by the obstetrical nurse at the end of ten days or two weeks, if there is an infant welfare station in the community, she should be referred to it and the station nurse notified. Even if her name naturally comes to the nurse through the birth registration office, as it does when the work is carried on by the city, the psychological effect upon the mother of knowing that these nurses are working together more readily secures her cooperation.

The following policy is put into the hands of the nurses of the Boston Baby Hygiene Association as a guide to their work. The order and plan of visits is left largely to the individual judgment. Our main object is the education of the mother, and her ability to follow our instructions depends to a great extent upon her social conditions. Much of the nurse's influence can be lost by urging the

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mother to do the, to her, impossible thing. The nurse may go to a house for the express purpose of inducing the mother to arrange for the baby to sleep alone, and instead find conditions such that she spends the rest of the morning, or even longer, looking for a better tenement. Or she may go with the father to look for a job, when she had intended asking for the baby's milk from a charitable organization.

NURSES' POLICY.

1. To encourage breast feeding in every case.
   (a) This means teaching the mother diet, hygiene, and the right kind of exercise to enable her to nurse her baby.
2. When artificial food is necessary, to impress upon the mother the advisability of having the feeding directed by a physician.
   The nurse is to visit the homes
   (a) To demonstrate the preparation of food.
   (b) To observe the mother as she prepares the food, until she has mastered the process.
   (c) To make sure she knows how to care for the milk after it is prepared.
   (d) To teach her the proper care of nipples and feeding bottles.
   (e) To discourage the use of pacifiers.
   (f) To insist upon regular intervals of feeding.
3. To demonstrate the baby's bath, making the baby's bed, ventilation of the rooms, value of fresh air for both mother and baby, the making or buying of suitable clothing for the baby.
4. To be ready to advise about the care of other young children in the family.
5. To know the charitable agencies, hospitals and dispensaries in the city and be ready to cooperate with them.
6. To direct the mother, when necessary, to those who give prenatal instruction.
7. To organize mothers' meetings, when advisable.
8. To urge the mother to bring the baby to conferences, whether he is breast fed or bottle fed, weekly when he is small, less frequently as he gets older, then again weekly when he has a change of diet.
9. To make careful uniform records.

It is not necessary to have milk dispensed from the conference station, if a good grade can be obtained in the community at the same price. We have stations both with and without this service, but every nurse feels that the time spent during the milk delivery is most valuable. By no means all the babies registered get milk from the station, but the daily contact with thirty, forty or sixty families is well worth the nurse's time and trouble. Through this method the mothers acquire the habit of reporting the condition of the entire family as well as the baby, and much valuable time is saved the nurse in her home visits. In this way the mother also forms the habit of getting the milk early and preparing it at the same time each day.

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Dr. Chipman made the statement at the meeting of this Association two years ago that "the hospital is the student's work shop." So also should be the well baby clinic. No one would think of putting an untrained man in any work shop without first having him under supervision and guidance, nor of turning a medical student loose in a hospital without the example of physicians and surgeons older in experience.

The doctors in charge of the welfare stations are generally men interested in pediatrics. If they could be paid for their time, we might get a more continued and therefore better service, and the help they could give the hospital interne or younger physician in acquiring the social attitude and a knowledge of community problems, as well as in the feeding of the well baby, would be an incentive to the volunteer, who truly needs this work to supplement his hospital experience. It is not doing justice to the people to put *just any doctor* in charge of a station. Now and then physicians, as well as nurses, fail to "get the vision." Many a truly intelligent doctor comes into the conference and so antagonizes the mothers that the nurse has great difficulty in bringing them to anything like the proper attitude. The milk station babies are not acutely ill, and the mothers will not be driven like so many animals. Even if we could do this, we all know that any form of education makes a deeper impression when the pupils can be made to seek it than when it is forced upon them. Therefore one must take the time to make things seem desirable. It takes patience to do this work and a nurse must never be made to feel that other duties are so pressing that she can not have time for any explanations.

For example, in the subway a few days ago I saw a well dressed child of about three years playing in a sand can put there for the convenience of people who wish to expectorate. When I called the mother's attention to its uncleanliness, she remarked that she did not mind the dirt, and her manner plainly indicated that she could not understand why I was interested. When I suggested the possibility of contracting tuberculosis or diphtheria, she was still indifferent, but when I mentioned infantile paralysis, she gathered up the child and thanked me profusely for my interest.

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Having then, a paid staff of doctors, one could insist upon their attendance at regular monthly meetings to talk over the work with the director. This would help greatly in unifying the methods as well as in stimulating interest.

Little Mothers' Leagues or Little Nurses' Clubs are a great help, if they can be carried on so as to reach a large number of suitable age. To take small groups of very young girls, as is sometimes done, is only a drop in the bucket.

Dr. H. W. Hill, in his little book called "The New Public Health," makes a statement regarding the teaching of public health bacteriology which may well be applied to the instruction of little mothers.

"To teach women, girls, prospective mothers, that they may practice in their households, and in turn teach their children to war on invisible germ-foes is one of the functions of public health bacteriology. Only in the *public schools* can it be taught with emphasis, weight and uniformity enough to impress the masses."

The knowledge thus obtained would be kept alive in subsequent years by lectures, mothers' clubs, pictures or some other form of publicity.

To summarize, a model infant welfare organization should have:

(1) A wide-awake, interested board of managers;

(2) A director, who keeps in touch with all outside agencies, is on the alert for ways to extend and broaden the work, introduces new methods and keeps alive an interest in whatever is best in the old;

(3) A superintendent of nurses, if many nurses are employed;

(4) Competent, well-trained nurses, thoroughly in sympathy with the work in all its phases;

(5) Conference stations in charge of paid pediatricians, who not only examine the babies and give directions regarding their care, but also train volunteer physicians and advise and direct the nurses;

(6) A good milk supply, either connected with or apart from the association.

The work should include prenatal care and supervision of the baby up to the age of two years at least.

The obstetrical and postpartum work should be done by the visiting nurses' agencies.

There *should be a dietitian connected with each station,* or suf-

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ficient nurses to do the work, all demonstrations being made in the homes. Mothers' clubs, especially in the foreign-speaking districts, should be kept purely social or used for the teaching of the English language.

Infant welfare work is relatively a new field. All the efficiency, all the concentration, all the publicity possible to command will not be too much to bring it to the high standard it deserves. The tendency of the present day in all professions and industries is towards concentration and specialization. Infant welfare work demands not only a physician with a well-grounded knowledge of pediatrics but also a nurse trained along similar lines. It is, moreover, of sufficient importance to require a nurse's whole time and undivided attention. It should find no place in any scheme for generalized nursing.

DISCUSSION

Miss Marie Phelan, Infant Welfare Society, Chicago: In Chicago we require nurses to be graduates of some training school and registered nurses, not necessarily in Illinois. It is hard to get those who have had active training in the care of babies, and we have to give a great deal of it to them when they come to us. A nurse must be enthusiastic about this work. That has more to do with it than any other characteristic. Unless she is enthusiastic and interested in babies she cannot be a good nurse. We require the nurses to take an evening social training course at the Chicago School of Civics.

Question: Before they are on the staff?

Miss Phelan: No, after.

The Chairman: I understand that they require the nurses to take a course of that sort before they are accepted on the staff in Boston.

Miss M. A. Jones, Baby Hygiene Association, Boston: We do not always require it, but we give the preference to one who has had a public health course, unless it is a choice between that and a very good infant training; then we take the one with the good infant training.

Miss Leete: What are the other qualifications?

Miss Jones: A diploma from a recognized training school. The nurse must be registered in the state. If possible she must have infant training. We find we can give them the public health training much better than the knowledge of infant work.

The Chairman: Our public health nurses in Cleveland are obtained through a central committee composed of superintendents of different groups of nurses. After being assigned to their special division they are only responsible to their own superintendents. All the public health nursing in Cleveland is uniform, we have a three-year course, where the National Association has two. We thought the National was three years, and we have not reduced the length of

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time since learning that theirs was only two. Otherwise our standards are the same.

Speaker: School nurses ought to have special training.

Miss Jones: I don't think we can demand special children's training yet. The supply is limited. We must give it to them after appointment in some instances.

The Chairman: In Cleveland we started infant hygiene classes after school hours. The Babies' Dispensary gave us a chance to do it. When it was put into the regular curriculum we had classes and lectures at the Babies' Dispensary. We do not have a demonstration now because they have had the classes for three years, but every year Dr. Wyckoff lectures to the school nurses on infant hygiene and they follow out the same plan of work as we do. We feel that the school nurses need training in baby care.

The Chairman: We also have in Cleveland in connection with the Babies' Dispensary and Bureau of Child Hygiene, a Junior Mothers' Corps, for girls above the school age who are not mothers. We are taking them from ten to sixteen. The younger girls, once in a while, have had infant hygiene in the public schools and the same girl gets the instruction twice. In this class we are reaching girls who, likely enough, will be mothers in a few years. To me that is a very important group to reach.

Miss Minnie H. Ahrens, Infant Welfare Society, Chicago: How are these girls reached? What propaganda is used to interest the girls of this age? It is a group to which we have not paid as much attention as we should.

Miss Leete: We reach them through the nurses in the district knowing the families, through the Associated Charities, etc.

Miss Ahrens: Are these classes held in the evening?

Miss Leete: No, in the afternoons, in our dispensaries; we have fifteen dispensaries.

Miss Marlatt: Tell us a little more.

Miss Leete: We have been very successful and the girls are very interested, two hundred girls are doing the work, and it takes a nurse who has had training, because they do ask a great many questions.

Miss Ahrens: Are not a great many of the girls working girls?

Miss Leete: Some of them. We also give lessons in connection with the evening settlement classes.

Miss Helen W. Kelly, Health Department, Chicago: Is not the factory girl a great problem? We give the "Little Mothers' Club" work, for which we are considering the finding of a different name, calling it, perhaps, the girl's health league, as in many schools, particularly the parochial schools, the mothers and teachers object to the present name or to anything that might suggest sex hygiene. In this work we do not reach the factory girl; often she does not finish grammar school, then at seventeen or eighteen she marries. We would like in some way to give this work to those girls as we are giving it to the girls of the

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seventh or eighth grades in school. We have had a few evening classes in the settlement, but how to make a general appeal is something I would like to hear discussed.

In the past summer campaign of infant welfare work we found at least six of the girls who had taken the training in the schools who are now real mothers and are carrying out the instruction they received in the classes.

The Chairman: Have you consulted the social service departments in your factories, or do you not have a social worker in most of them? I suppose the solution lies in our own hands. It is a case of more workers and a larger budget.

Miss Ahrens: How would evening classes in the public school work out? It would seem unless this plan of classes is done on a large scale and under the public school system we are not going to reach the number of girls we should. The night school would make it possible to reach the older girls and young women employed.

Miss Bradshaw: Why could they not be reached from the social centers?

Miss Jones: We often have talks given at the social centers.

The Chairman: I think this plan is not quite as satisfactory as a regular class. Our nearest settlement asked us to give them a two-year course in infant hygiene.

Miss Kelly: We have now under consideration three evening classes, but there are many people who do not know they need this instruction. We must go to them and tell them of their need.

Miss Phelan: In regard to the girls in the factory:—They are doing this work in several of the social service departments in factories in Chicago. Some talks are given in the mornings.

A Speaker: We had an interesting class this spring, in the continuation schools, of girls from fourteen to seventeen years of age who are working. They are required to attend school four hours a week, if working; those who stay at home go every day. We asked permission of the principal to give the talks at nine in the morning because more girls were there at that time and we gave four talks on the care of the baby, to from forty to seventy girls. The questions they asked were surprising. We used a life size doll for the demonstration of bathing and clothing the baby. We are in a dairying district, but we frequently find mothers using condensed milk, so we gave them one talk on the dangers of improper feeding and laid great stress on breast feeding. We spent some time on the care of the eye and the nose and one of the talks was on infants' diseases.

Miss Eliza McKnight, Health Department, Philadelphia: We have classes for the younger children from ten to twelve years old in the public schools, after hours—not incorporated with the public schools. We have given a number of health talks to the older girls, but have had no systematic course of lessons for them.

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Miss Leete: I like Miss Kelly's idea about changing the name of the "Little Mothers."

Miss Wheeler: Has there been success in having the school nurses teach the little mothers? The individual nurse might be very much interested, but we have not found it so in Washington.

Miss Leete: Do the hygiene nurses teach it in Washington?

Miss Wheeler: Yes.

Miss Leete: Do the school nurses teach it at all?

Miss Wheeler: Not now. It was not a success.

Miss Leete: Have you found school nurses could teach infant hygiene?

Miss Ahrens: There is no reason why they can not if they are prepared for it. They do in Chicago. The nurses who do the teaching have had preparation in the infant welfare work by doing infant welfare work during the summer months. I should say from what I know of the work that it has been most successful. I attended one or two closing demonstrations and they were very well done. I think it is a question of being prepared, whoever the nurse is.

Miss Kelly: I will tell you how we prepare our nurses. Every year we lend some nurses to Miss Ahrens for the summer. We do that with rather mixed motives; we want to help her, but we also want to help ourselves. Our nurses get the benefit of the methods of the society which we assume are up-to-date. Every Saturday morning the nurses who are teaching the little mothers clubs meet to discuss the subject for the next week's lesson, and bring up all the questions they can think of that the girls could ask, then we have someone go through the demonstration that is to be given the following week. We frequently call on Miss Ahrens or Miss Phelan to come and help us out by telling us of new methods, etc. No doubt it is due to this cooperation that our nurses are able to carry on the work as well as they do.

Miss Olmsted, Milwaukee: I do not see any reason why the school nurses could not teach the little mothers club, but here it is done by the infant welfare nurses under the Health Department.

The Chairman: I used to think the school nurses could not do it because every nurse should have special training. I was converted because we could not do our own job well enough and we needed their cooperation. However, I do think they need some special training or some help to be able to answer the questions of the children.

Miss McKnight: The school work in Pennsylvania is under the state and the state has never been interested enough to start this; it was taken up by the city and it is by courtesy that we are allowed to go into the schools.

Dr. Ada E. Schweitzer, Indianapolis: Is there any provision made for this specialized training in the nurses training schools, and if so, to what extent, especially for public health work?

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The Chairman: There are several special organizations that have courses in public health work.

Dr. Schweitzer: In the regular training school?

The Chairman: No. They are putting it in, however, more and more. Training school superintendents recognize the need, but they have as much as they can put into three years now. They are broadening as rapidly as possible, and putting in more infant welfare work. Post-graduate courses are also offered in many hospitals and in some public health departments.

Dr. Schweitzer: I have some classes of nurses in hygiene and bacteriology, and I wondered if it would be practical to introduce some practical work of this kind into the lectures.

The Chairman: I think the superintendents appreciate the fact that this instruction must be included, but it is a case of not being able to rearrange the curricula rapidly enough.

Miss Anna Haswell, Milwaukee: There is a very decided effort being made to have every school in Wisconsin give a course not only in pediatrics as a science, but a complete course in the study of school children and infants, and I think that very much has been accomplished in the short time in which this committee has been working. We find that our superintendents are very ready to co-operate and the boards of directors are standing back of us. If the necessary special training cannot be given in the home hospital it must be done in special institutions.

The Chairman: Is it not true that most state registrations demand a certain amount of child training.

Dr. Schweitzer: They get valuable work in the University of Wisconsin.

Miss Ahrens: Post-graduate work?

Miss Haswell: We feel we have no right to endorse schools that do not give this special training when it is so vitally important to every community. While Wisconsin is new in many ways and our schools are new we feel that we must get this idea recognized and established or we shall never get any farther.

Dr. Ellen A. Stone, Providence: I am glad to know there is talk of changing the name of the Little Mothers' Clubs. I do not think any of the work should be done as early as ten years old. All work should be in school hours. And it should begin after fourteen. We have enough children staying home to take care of the babies now, and if they can do it still better they will have to do it still more. They ought to be allowed to be children and not be little mothers.

Miss Ahrens: While I agree with Dr. Stone about the younger girl I would ask what are we going to do about the little girls and the little boys of eight and ten who *must* do it and *are* doing it? It is not a question of asking them to do it, they are doing it.

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Dr. Stone: I cannot answer that except to say to try through social agencies to change the condition. Because they are doing it is not a reason for encouraging them to do it.

Miss Peterson, La Crosse: Children will stay at home and take care of the babies and I think they ought to have education for it. I am glad to hear Miss Kelly suggest changing the name. I had considerable difficulty in getting girls to the class because of the name.

Miss Ahrens: I would like to go back to the question we were discussing of preparation of nurses not only for infant welfare work, but for public health work. I cannot feel that I can let this opportunity go without saying something more along that line. A few months ago I heard a speaker make a strong plea for better education of public health nurses. He recommended asking training schools in our hospitals to give more of this training and to equip women for public health work. Those of us in touch with the training school work realize how full the time is now and how subjects are not being adequately covered. I agree with what Miss Haswell said as to requiring better training in pediatrics and care of school children. I believe the training school should give at least a point of view to the student nurse by opening up the question through a certain amount of class work and lectures and work in social service departments, but I do not believe we as nurses have a right to look to the training school to send us out as trained public health nurses after three years training. The doctor spends three or five years in the medical school and does not come out as an obstetrician, a surgeon, or a specialist in some particular line; he comes out with a general training and if a special training is to be followed he expects to spend another year or longer to prepare for his work. I believe that is what the public health nurse must do, and we are having opportunities at this time all over the country to do this. We have eight or nine places where courses are being given to train for public health nursing, and it seems to me these are the avenues we should expect to use and not think ourselves prepared until we have done so.

In Chicago a course in civics and philanthropy was given by request. It was well attended, and this year there are to be two courses, one of three months and the other a full year.

I do not want it to be understood that I do not think the training school has any obligation, but I do not believe it is entirely the obligation of the training school. A number of larger schools are giving their senior classes anywhere from ten to twelve lectures on the problems of public health and social work, asking people who are actively engaged in work of this sort to deliver the lecture. I give two lectures to these classes on infant welfare. I do not pretend that these lectures prepare them to go out as infant welfare nurses, but they give them some knowledge of what is being done and the need of it.

The Chairman: I think the discussion has shown that the nurse must be well trained. Now I want Miss Ahrens to read Miss La Forge's paper on the "Standards for the Nurse, Not for *Nursing*, But for the Nurse."

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STANDARDS FOR THE INFANT WELFARE NURSE

ZOE LA FORGE, R. N., Babies' Milk Fund Association, Detroit

Infant welfare nursing has developed from the necessity which produced the Infant Welfare Society separately from all other societies organized for the care of the sick and dependent.

A problem was present which clamored for full time service of expert minds. It needed study and analysis; it needed painstaking care in detail. It was not at all clear that the procedures and methods of the organized societies would apply to the case in hand. As experience grew, specialization became even more rigid and lines of cleavage developed very markedly between societies engaged in various forms of public health nursing, particularly between infant welfare societies and those doing general visiting nursing.

This has tended to obscure the points of common interest and often to antagonize the spirit of cooperation and unity which are generally in existence between them. It is probably practicable to combine in many ways for the purpose of better organization, though this is debatable, of course. The standards which are accepted by both forms of organization are a high educational requirement previous to entering training, a general hospital training obtained in one or more hospitals; other educational experience, such as teaching normal school or college work raise the standard considerably.

Some concrete and definite problems which assume considerable proportions when the staff of an association is large are educational in nature. One of these which I wish to present for discussion in detail is a satisfactory method of grading nurses. It may be of interest to you to discuss the application of one form of standardization used by a purely educational body to measure the efficiency of its teachers, and to apply it theoretically to a staff of infant welfare nurses.

The card (5 x 8) has seven general classifications of efficiency which are further subdivided and graded according to per cent, the total standard of course being 100. A copy of the card follows:

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Name of Teacher.....School.....
(Surname) (Given)

Grade..... Class.....191....

TOTAL TEACHING EFFICIENCY.....100 POINTS

I—Physical Efficiency

(12 Points)

1. Impressions—general (2) ....
2. Health—general (2) ....
3. Voice (2) ....
4. Habits—personal (2) ....
5. Energy (2) ....
6. Endurance (2) ....

II—Moral—Native Efficiency

(14 Points)

1. Self-control (2) ....
2. Optimism—Enthusiasm (2) ....
3. Sympathy—tact (2) ....
4. Industry—earnestness (2) ....
5. Adaptability (2) ....
6. Sense of humor (2) ....
7. Judicial mindedness (2) ....

III—Administrative Efficiency

(10 Points)

1. Initiative (2) ....
2. Promptness and accuracy (2) ....
3. Executive capacity (2) ....
4. Economy (time, property) (2) ....
5. Cooperation (associates and superiors) (2) ....

IV—Dynamic Efficiency

(32 Points)

1. Preparation (4) ....
   Including:
   (a) Intellectual capacity
   (b) Academic education
   (c) Professional training
2. Professional attitudes and interest (4) ....
3. Human nature attitudes and interest (appreciation of values—intellectual, social and moral in child life) (4)
4. Instructional skill (10) ....
   Including:
   (a) Attention and interest of pupils
   (b) Formality vs. Vitality of instruction
   (c) Organization and presentation of subject matter
   (d) Participation and contribution of pupils
5. Governmental and directive skill (10) ....

V—Projected Efficiency

(6 Points)

1. Continuing preparation (2) ....
   (a) Daily; (b) Weekly; (c) Annual
2. Increase of professional equipment (professional reading and study; travel) (4) ....

VI—Achieved Efficiency

(16 Points)

1. Success and attainments of pupils (12) ....
2. Stimulation of pupils, individuals and community (4) ....

VII—Social Efficiency

(10 Points)

1. Cultural and ethical interests (3) ....
2. Civic interests (3) ....
3. Interest in school activities (4) ...

REMARKS:

.....
Principal.

.....
School.

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It will be seen that the general classifications are as follows:

1. Physical 12 per cent
2. Moral or native 14 per cent
3. Administrative 10 per cent
4. Dynamic 32 per cent
5. Projected 6 per cent
6. Achieved 16 per cent
7. Social 10 per cent

The first, physical efficiency, given a rating of 12 per cent has the following six subdivisions each equal in value to 2 per cent; all of which are applicable to the nurse:

a Impressions—general
b Health—general
c Voice
d Habits—personal
e Energy
f Endurance

The second, moral or native efficiency, has seven subdivisions, each equal in value to 2 per cent:

a Self-control or poise, balance
b Optimism or enthusiasm
c Sympathy—tact
d Industry, earnestness
e Adaptability
f Sense of humor
g Judgment

The third, administrative efficiency, has five subdivisions, each equal in value to 2 per cent and totaling 10 per cent:

a Initiative
b Promptness, accuracy
c Executive capacity
d Economy (time and property)
e Cooperation (associates and superiors)

The most interesting and significant classification is that of dynamic efficiency, and expresses that force within oneself resulting from a cultivated capacity to do or act. It includes preparation, both academic and professional, and intellectual capacity. It proceeds to estimate professional attitudes and interest and human nature attitudes and interest, enlarging upon the latter as appreciation of values—intellectual, social, and moral in child life. It estimates the instructive skill or teaching ability, including therein:

a Attention and interest of pupils
b Formality vs. vitality of instruction
c Organization and presentation of subject matter
d Economy (time and property)
e Assignment of lesson

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A further division is governmental and directive skill. The total division is given a rating of 32 per cent.

The last three classifications of social, projected and achieved efficiency are less strictly applicable and may, for our purposes, be omitted though they may be interesting and valuable in other departments of nursing, such as institutional or administrative work.

The four classifications of physical, moral or native, administrative and dynamic efficiency may be applied with little modification to nurses in training schools or in public health service. A fifth on technique may be added as applying especially to the nursing profession.

Let me illustrate by applying the grading to a graduate nurse who has had one year of infant welfare nursing, taking the five classifications as given in the previous paragraph and giving them arbitrarily a value of 20 per cent each:

In physical efficiency she is slightly below par in endurance and is graded at 18 per cent. In moral or native efficiency she is slightly lacking in poise, self control or balance and also in adaptability and is given a rating of 18 per cent. In administrative efficiency she lacks in executive capacity and somewhat in initiative. Her grade here is 18 per cent. In dynamic efficiency her professional preparation is very high, the best, but her academic education is low, through no fault of her own. Her professional attitudes and interest and her appreciation of social, moral and intellectual values are high. Her instructive skill or ability to teach analyzed according to attention and interest of patients, the formality versus vitality of instruction to patients and organization and presentation of the subject matter (child welfare, specifically in this instance) are all of very fine order. Her grading here is brought down by lack of academic education and is placed at 17 per cent. Her technical efficiency is high and is graded at 20 per cent.

The total efficiency is found by adding the totals of the five classifications and equals in this case 91 per cent, a very fair estimate of the qualities of this nurse if I had been asked to give an estimate without such a standard as this. However, estimates made without a standard are likely to be unfair in one way or another. The standard overcomes the danger of vague and general terms and forms

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a sound basis of computation for the qualities of a nurse even in the hands of a supervisor.

It seems a fair beginning toward the proper certification or grading of nurses coming to various departments for short-time experience and avoids that opportunity for critical commentary when inquiry is made for a nurse's record and it is found that none has been kept. It is in all fairness due the nurse as well as the Association.

Further standardization is seriously needed in the matter of records suitable for a specialized type of work, such as infant welfare. Annual financial statements also should be standardized if the work of one city is to be comparable with another.

The outline given above is merely suggestive; the subject is exceedingly complex and it is hoped may be discussed concretely rather than in the abstract.

DISCUSSION

Miss Etchberger: Miss La Forge has given us a most interesting outline on the standard for the infant welfare nurse.

I think we all agree that this standard should be as high as possible and think the grading for efficiency would be most useful to the organizations that thus far have not been using this method in their work. The organizations that make these demands must be prepared to pay a living salary to the nurse, and I would like to recommend that this section of the American Association for Study and Prevention of Infant Mortality go on record as recommending a minimum salary that would make it possible for us all to be able to secure the service of the best qualified nurses.

I personally feel that the time has come when we must first standardize the salary of the nurse engaged in infant welfare nursing. Then we can demand the highest type.

Miss Wheeler Everything we have heard read and said today proves more and more how high are the qualifications that the nurse should have, and I think with this view that we ought to feel that the time has come when we should be willing to ask the organizations to pay these nurses a proper living salary.

Miss Jones: To whom would this resolution go? Who would do it?

Miss Leete: I was hoping some committee might be formed to study this card and perhaps try it out, I think we cannot make any decision now, but a committee might perhaps be appointed which would take from this card the points essential and have various organizations try it out during the year.

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Miss Ahrens: Miss Kelly might tell us how their official card works.

Miss Kelly: Our card is very different from this. We grade the nurse on her school work, her technique, adaptability, quality and quantity of work, accomplishment of her plan of work, and then her personality; her field of work, her standing in the district, how she is received in the homes, her observation, her perseverance in following up cases, and her attitude toward her co-workers, medical inspectors, supervisors, etc. In regard to this outline there are two points I would like to have given a higher rating, the second and sixth. Under II "Optimism, enthusiasm and a sense of humor" are given a rating of 2. I would like to suggest a higher rating for these qualities, even if there is a lower rating for the other things.

The Chairman: I agree with that.

Miss Wheeler: I move that the chair appoint a committee, a sub-committee of the committee on Nursing and Social Work to try out this outline and bring recommendations next year.

Miss Leete: Would you like them to touch on Miss Etchberger's minimum standard?

Miss Wheeler: Yes.

Miss Hall: I second the motion.

(The motion was put to the vote and carried.)

Miss Leete: I wish we might send a letter to Miss Shaver expressing regret at her illness and appreciation of her taking the chairmanship of this committee and starting it.

(The above was put in the form of a resolution and duly seconded and carried.)

(The chair then appointed the following committee on Standard Card, Miss Etchberger, Miss Wheeler, Miss Kelly, Miss Daniels and Miss Jones.)

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AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

(Headquarters, 1211 Cathedral Street, Baltimore, Maryland)

Suggested Outline for Report of Affiliated Societies for year ending September 30, 1916

Reports were asked for in accordance with Article X of the By-Laws. The headings given below were intended to be suggestive only, and the Affiliated Societies were asked to include in their reports, brief descriptions of distinctive features of their work which were not touched upon in the outline. Unless otherwise designated, the statistics are for the year ending September 30, 1916. Marginal figures in the reports which follow refer to corresponding ones in the outline. The replies to section VI do not appear in the separate reports, but are tabulated on pages 276, 277.

I. Name and address of organization.
   Outline briefly the activities that are included in the work of your Association,—prenatal care, obstetrical care, postnatal care, feeding conferences, prevention of blindness, hospital care for sick babies, rural nursing.

II. What features do you find it possible to develop with the greatest success—the preventive and educational, or the remedial?

III. What do you regard as the most important advance in the work of your Association during the current year?

IV. Is all your work done gratuitously, or do you make any provision for the instruction or care of mothers of moderate means who are willing and able to pay for the services such as are rendered by your Association?

V. If your work is financed by voluntary subscriptions. in what way do you bring the work you are doing, and its needs, to the attention of the public?

   Summary of prenatal work

   Summary of postnatal work

VI. As far as possible, please supply the figures asked for below. for each year, for the years ending Sept. 30, 1915, and Sept. 30, 1916.
   (1) Date of organization (2) Age limit of children cared for
   (3) Staff: doctors, nurses
   (4) Budget
   (5) Total number of children cared for
   (6) Total number under 12 mos. old cared for
   (7) Total deaths, babies under 12 mos. old under care
   (8) Total number births recorded in your city or town
   (9) Total deaths of babies under 12 mos. old in your city or town

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	Date of organization	Age limit of children cared for	Staff: Doctors 1915-16	Staff: Doctors	Staff: Nurses 1915-16	Staff: Nurses	Budget 1915	Budget 1916	Total number of children cared for 1915	Total number of children cared for 1916	Total number under 12 mos. old cared for 1915	Total number under 12 mos. old cared for 1916	Total deaths of babies under 12 mos. old under care 1915-16		Total number of births: Recorded in City or Town during the year ending December 31 1914	Total number of births 1915	Total number deaths of babi under 12 mo old 1914	Total number deaths of babi under 12 mo old 1915
CANADA																		
Hamilton																		
Babies' Dispensary Guild....	1911	2 yrs.	5	6	3	4	*		....	766	....	625	27	18	2,937	2,875	492	42
Montreal																		
Univ. Settlement Milk Sta...	1918	.....	2	3	2(2)	3	*		148	204	95	163	..	..	21,386	20,692	4,201	3,77
CONNECTICUT																		
New Haven																		
Infant Welfare Assn.....	1909	2 yrs.	4	4	4	4	$5,263.14	.....	695	964	563	809	20	20	4,160	4,432	417	39
Waterbury																		
Visiting Nurse Assn.....	1903	2 yrs.	..	6(3)	8(3)	14	8,191.98	.....	1,112	1,570	....	1,248	..	..	2,222	2,130	313	30
DISTRICT OF COLUMBIA																		
Washington																		
Diet Kitchen Assn.....	1901(4)	2 yrs.	24	26	8	8	10,000.00	12,000.00	1,749	2,289(5)	1,060	1,789	24	35	7,130	7,167	715	77
FLORIDA																		
Jacksonville																		
Infant Welfare Society.....	1913	2 yrs.	..	..	1	(6)	.....	.....	138	....	111	....	10	..	1,776	1,608	176	14
ILLINOIS																		
Chicago																		
Infant Welfare Society.....	1910	2 yrs.	23	23	25	26	46,000.00	50,000.00	9,313	8,670	....	....	..	..	.....	60,686	.....	6,20
KENTUCKY																		
Lexington																		
Baby Milk Supply Assn.....	1914	.....	..	3	..	1	*		....	180	....	110	..	7	.....	.....	.....	.....
Louisville																		
Babies' Milk Fund Assn.....	1908	3 yrs.(7)	8	11	7	8	10,511.18	12,000.00	1,209	1,246	....	792	12	14	4,233	4,087	504	39
MARYLAND																		
Baltimore																		
Maryland Assn. for Study and Prev. Inf. Mort. (Babies' Milk Fund Assn.).....	1904	3 yrs.	9	12	16	20	12,148.31	20,989.96	5,110	7,718	....	....	204	339	12,637	13,634	1,954	1,63
MASSACHUSETTS																		
Boston																		
Baby Hygiene Assn.....	1909	1 yr.	23	22	17	18	24,745.19	25,526.81	4,679	5,060	....	....	*	..	19,462	19,725	2,007	2,04
Instructive District Nursing Assn.	1886	.....	..	..	76	85	69,534.32	80,007.98	4,337	4,304	*	....	..	..	.....	.....	.....	.....
Society for Helping Destitute Mothers and Infants	1873	.....	4	4	..	..	6,747.00	.....	346	294	189	150	21	4	.....	.....	.....	.....
Cambridge																		
Avon Home	1874	.....	..	..	..	..	.....	24,397.40	....	479	*	....	..	..	.....	.....	.....	.....
Holyoke																		
Infant Hygiene Assn.....	1911	2 yrs.	10	10	1	2	3,000.00	3,750.00	....	....	330	363	4	20	1,700†	1,700†	291	26
MICHIGAN																		
Detroit																		
Children's Free Hospital Assn.	1886	12 yrs.	39	..	35	..	55,404.47	.....	*	....	396	....	98	..	.....	.....	.....	.....
MINNESOTA																		
Duluth																		
Infant Welfare Dept. Duluth Cons. Scottish Rite Masons	1911	3 yrs.	2	2	2	2	*		600	723	....	....	..	..	2,080	2,158	187	18
Minneapolis																		
Infant Welfare Society.....	1910	2 yrs.	4	5	4	4	5,400.00	6,600.00	1,648	*	....	....	..	..	7,889	8,522	658	60
St. Paul																		
Baby Welfare Assn.....	1910	3 yrs.	6	8	4	5	5,600.00	7,500.00	817	1,098	....	....	35	24	5,195	5,290	160	11
NEW JERSEY																		
Atlantic City																		
Child Federation	1916	6 yrs.	..	2	..	1	.....	.....	*	....	....	72	..	2	977	855	120	10

Jersey City																		
ision of Child Hygiene...	1914	6 yrs.	..	..	..	..	*											
Newark																		
bies' Hospital	1896	.....	16	16	20	20	15,000.00	.....	1,958	....	....	....	..	..	.....	.....	.....	.....
Orange																		
et Kitchen Assn.....	1895(8)	.....	..	..	..	..	6,653.87	.....										
NEW YORK																		
Albany																		
ool for Mothers.....	1916	2 yrs.	..	2	..	1	*		....	....	....	....	..	..	2,115	2,233	266	272
Batavia																		
ild Welfare Assn.	1914	2 yrs.	..	1	..	1	.....	800.00	....	170	....	....	..	..	.....	373	.....	56
Binghamton																		
ild Welfare Assn.....	1913	5 yrs.	..	2	1	1	1,266.00	.....	*	....	....	....	..	..	.....	1,433	.....	179
Buffalo																		
strict Nursing Assn.	...	.....	4	12	5	12	.....	.....	*	....	1,668	1,904	..	..	12,612	12,683	1,633	2,313
New York																		
bies' Dairy Assn.	1908	.....	..	..	..	..	6,819.24	.....										
bies' Welfare Assn.	1912	.....	..	..	..	..	.....	.....	4,006	9,602	2,791	6,899	..	..	140,647	141,256	13,312	13,866
. Y. A. I. C. P. Bureau of Educational Nurs.	*	.....	..	..	17	27	.....	.....	14,487	12,855	1,766	1,086	53	34	.....	.....	.....	.....
w York Diet Kitchen Assn.	1873	6 yrs.	21	26	8	9	.....	.....	....	6,359	....	3,485	..	57	.....	.....	.....	.....
Riverdale-on-Hudson																		
ealth League	1909	.....	1	1	1	1	.....	.....										
Utica																		
by Welfare Committee...	1912	2 yrs.	9	8	2	4	2,309.00	3,900.00	692	741	....	....	..	..	2,383	2,411	287	299
OHIO																		
Cincinnati																		
wish Inf. Welfare Circle..	1915	3 yrs.	2	2	1	1	*		....	....	....	....	..	..	3	.....	.....	.....
Cleveland																		
bies' Dispensary & Hosp...	1906	3 yrs.	7	8	5	8	.....	.....	3,290	3,351	....	....	..	..	16,144	16,623	1,946	1,916
ard of Health. Div. of Child Hygiene	1911	6 yrs.	15	15	34	34	.....	.....	4,478	4,619	....	....	..	..	.....	.....	.....	.....
siting Nurse Assn.	....	.....	..	..	38	40	52,000.00	58,000.00	....	1,461(9)	....	....	..	..	.....	.....	.....	.....
PENNSYLVANIA																		
Philadelphia																		
bies' Hospital	1911	3 yrs.	..	..	..	..	20,122.65	37,036.88	*	....	....	....	..	..	.....	.....	.....	.....
bies' Welfare Assn.	1914	.....	..	..	..	..	.....	.....	*	.....	....	....	..	..	.....	.....	.....	.....
ild Federation	1913	.....	..	..	..	..	.....	.....	*	....	....	....	..	..	.....	.....	.....	.....
ric Club — Com. on Children's Welfare	....	16 yrs.	..	..	..	..	.....	.....	*	....	....	....	..	..	.....	.....	.....	.....
arr Centre Assn.	1897	12 yrs.	2	2	3	3	4,318.48	4,289.91	....	1,162	677	547	30	25	41,063	40,849	4,981	4,218
Wilkes-Barre																		
siting Nurse Assn.	(10)	2 yrs.	3	8	2	4	300.00	1,000.00	576	724	280	394	18	13	2,237	2,229	303	337
York																		
siting Nurse Assn.	1908	3 yrs.	4	8	3	4	3,000.00	3,000.00										
RHODE ISLAND																		
Providence																		
by Welfare Assn.	1913	2 yrs.	..	8	..	8	.....	.....										
strict Nursing Assn.	1900	6 yrs.	..	..	8	10	10,000,00	10,000.00	2,677	2,775	....	....	..	..	6,098	5,833	702	623
WISCONSIN																		
Beloit																		
siting Nurse Assn.	1912	6 yrs.	..	6	..	2	*		....	113	....	80	..	5	415	408	35	23
Milwaukee																		
ivision of Child Welfare, Dept. of Health.....	1912	2 yrs.	24	24	14	14	19,228.00	20,000.00	1,486	1,785	5,262	6,547	74	63	11,929	11,278	1,119	1,065
fants' Hospital	....	.....	..	..	..	..	.....	.....										
aternity Hosp. & Free Disp. Assn.	1906	.....	16	15	17	25	20,000.00	.....	1,197	1,758	693	880	9	6	.....	.....	.....	.....
oman's Fortnightly Club (Fresh Air Pavilion).....	....	5 yrs.	7	5	6	7	.....	.....	37(11)	48(11)	....	....	1	1	.....	.....	.....	.....

AFFILIATED SOCIETIES

REPORTS

For the Year Ending September 30, 1916

CANADA

THE BABIES' DISPENSARY GUILD (Incorporated)

Hamilton, Ontario

I. Our work includes feeding conferences, home visiting with instruction in personal hygiene, general care of baby, and preparation and care of infant's food.

We admit a number of sick babies to the City Hospital. Such cases are always followed up, and when ready to be discharged are brought to our clinic before leaving the hospital, and are soon after visited in their homes. The co-operation of the nurse in charge of the Children's Ward enables us to keep in touch with many cases which might otherwise be lost sight of.

Although we hold no pre-natal clinic we see a number of these cases among our Dispensary mothers. They are visited, advised as to care of general health, seeing a doctor, and making definite plans for confinement. In needy cases an infant's first outfit of simple clothing is provided. Our stock of children's clothes comes largely in the form of donations being supplemented through the efforts of our Women's Board.

II. We do not treat sick babies other than feeding cases. During the past year many more mothers have brought their babies to our clinic during the first few months of life; the majority of new cases were entered well under a year. Despite an extremely hot summer we have had few deaths and it has been gratifying to meet with many instances where the mother by following our directions has been able to check a sudden diarrhea, and avoid a serious illness. Sick babies other than feeding cases, are referred by us either to the family physician, or more commonly to the Out-Door Department of the hospital.

III. Recent Advances: We have gained a wider public interest through the work of the Hamilton Baby Welfare Organization. Possibly the effects of the present war have helped to bring about a more general realization of the importance of the baby welfare work. Another branch was opened in one of the schools last May where our weekly attendance averages twenty-one.

IV. No provision is made for instruction or care of mothers of moderate means willing to pay for such services.

V. In 1915 our work was financed by a city grant of $1,000 and private subscriptions. In 1916 the city made an appropriation of 3 cents per day per baby. This was supplemented by private subscriptions.

Each month a "Mother's Letter" is mailed to the homes of every new-born baby registered at the City Hall. This letter describes our work and explains that subscriptions are gladly received. Last summer we held a "Baby Week" which was followed by a successful campaign for funds. This summer, in June, a Baby Week of a more extensive character was held. Educational leaflets were distributed throughout the schools, and appropriate talks were given illustrated by lantern slides. A hall was rented where the exhibit, belonging to the American Association for Study and Prevention of Infant Mortality was shown, together with moving pictures relative to Baby Welfare and other Public Health Subjects.

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Outing Day, when the school children and inmates of the various Children's Homes joined us in one of the city parks, brought out thousands of our citizens to watch the program of games, races, etc. So far, Hamilton is the only Canadian city which has taken up the Baby Week Movement.

SUMMARY OF POST-NATAL WORK ENDING SEPTEMBER 30, 1916.

I. We are encouraged by the regular attendance, (averaging 15 babies) of so many mothers, and by their interest and cooperation. Before long we hope to establish a branch in another district. Last May a branch was openen in a third school. This gives us three permanent depots, apart from the one at our headquarters. During the past summer we held seven clinics a week. Lately a suburban summer branch has been closed.

We are encouraged by the regularity of clinic attendance and by the interest and cooperation displayed in the majority of cases.

II. During the year 5,077 visits were made, besides a number of special calls unrecorded.

III. During the past few months fifteen cases of infantile paralysis have been reported, most of them of a mild type. Only one of these was among our own babies, and this child had not been to a clinic for over three weeks prior to onset of illness.

IV. We do not undertake follow-up care of children beyond 2 years of age.

HELEN R. MACDONALD, R. N., *Supervising Nurse.*

UNIVERSITY SETTLEMENT MILK STATION

Montreal

I. Work includes both prenatal and post-natal care.

Prenatal Care: Mothers are advised to go to maternity hospital or to see doctor in early stages of pregnancy. They are encouraged to save towards extra expense and to make the baby's outfit, also to get other necessities.

Post-Natal Care: Infant feeding and care are taught. Breast feeding is encouraged and every effort made to make this possible.

We are closely in touch with the Children's Memorial and other hospitals. Feeding conferences are held daily.

II. Features Developed With the Greatest Success: Emphasis is placed on preventive and educational work, by keeping in close touch with the family and being on such friendly terms that they will ask advice *at any time* and by always trying to satisfy the need of the moment.

III. Most Important Advances During the Current Year: We had a Child Welfare Exhibition in the Settlement House in June lasting for one week demonstrating efficient, simple and inexpensive methods of "How to Keep the Baby Well." Beginning in July and lasting until September 15th, we had an open air camp on Fletcher's Field. A physician was in daily attendance also nurses. Sick babies were cared for and milk was distributed to well and sick babies. The result was most gratifying.

IV. Our work is financed partly by the city and partly by private subscriptions.

The Settlement is a center where people of all ages and different nationalities, in a crowded district of our city, come together for wholesome enjoyment and self-improvement. Our workers constantly visit the homes of the neighborhood, and endeavour to improve the home life of the community. The Settlement attracts both the older dwellers in the district, and the families of immigrants speaking little or no English, and through the various activities good

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citizenship is developed. As many as eight hundred individuals come under the influence of the Settlement in one way or another every week. Mothers of all nationalities find a common meeting ground at the Milk Station and in the Mother's Club.

The attractive room in the Settlement House, where the milk station is now located, has been open daily, and has come to be recognized not only as a center for milk distribution and the instruction of mothers, but also as an educational center for nurses and other social workers. For this purpose nurses of the Victorian Order have been in attendance for a week at a time. These nurses gave help while receiving instruction, but such are the demands made upon the station, especially during the summer months, that it is hoped the whole time of an extra nurse may be secured for the hot weather period this summer.

Many problems besides those of infancy confront the Milk Station nurse. The welfare not only of the infant but of the family is the aim constantly kept in view.

KATE CARR, R. N., *Supervising Nurse.*

CONNECTICUT

INFANT WELFARE ASSOCIATION

New Haven

I. Feeding conferences are held weekly at the four milk stations. The babies are weighed by the nurses and prescribed for by the doctors. The formulae are demonstrated the following day by the nurse at the station, and supervised when put up by the mother at home.

II. We emphasize preventive and educational work. More well babies are brought now to the conferences and more are brought as soon as an illness begins. Mothers who have been here before bring their new babies and remember the method of preparation or learn again quickly.

III. There has been no change in the character of the work, but we find a steady increase in the obedience and respect of the various neighborhoods.

IV. For nursing cases there is a slight charge where possible beginning at ten cents, and more if they are willing. They are taught to consider the latter as a contribution to the work of the association. This can be made to include families of any income, as we are glad to let our experience be available to all.

We issue printed appeals and sometimes newspaper reports.

SUMMARY OF YEAR'S WORK:

In the past year we have enrolled 958 babies; held 179 conferences, and maintained four milk stations through the summer and three through the winter, as centers for instruction, supervision and nursing care. In this number we have had only 28 deaths, or 2.9 per cent, although many have come to us so ill that only the greatest care has saved their lives.

Our object is to develop the knowledge and judgment in each household so that the baby may be kept in good health with the minimum of care on our part, and these homes themselves become centers of instruction for the neighborhood.

MRS. DAVID S. SMITH, *Secretary.*

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VISITING NURSE ASSOCIATION

Waterbury

I. Activities included in the work of the Association: obstetrical care, postnatal care, feeding conferences, prevention of blindness; and to a certain extent our work on the outskirts of Waterbury amounts to rural nursing. We are hoping to start regular prenatal work in the near future.

II. Our aim is to lay emphasis chiefly upon the preventive and educational side, but as a Visiting Nurse Association we have developed the remedial side as well. Our baby welfare work is preventive and educational, our visiting nurses work, preventive, educational and remedial.

III. We regard the opening of a large and well equipped Baby Welfare Station, as the most important advance in the work of the Association during the year.

IV. Patients pay from 5 to 50 cents a visit. So do many for instructive visits. Free care and instruction are given to those who cannot afford to pay. We are glad to report that our free list is showing a marked decrease.

V. Our work is financed by voluntary subscriptions. It is advertized by newspaper publicity, by appeals sent with our report, and through schools and churches.

EDITH MADEIRA, R. N., *Supervising Nurse.*

DISTRICT OF COLUMBIA

WASHINGTON DIET KITCHEN ASSOCIATION

I. The Association extends to the mothers of the city, both white and colored, prenatal care through conferences at the welfare centers and hospitals; home visiting is conducted by one of the nurses assigned exclusively to prenatal work.

Obstetrical care is provided when necessary through cooperation with Out Patient Departments of hospitals and the Instructive Visiting Nurses, although efforts are made to persuade the prospective mothers to enter any of the local hospitals possessing adequate obstetrical equipment.

The infant welfare work is administered through five welfare centers located throughout the city. One center is maintained at Children's Hospital, and we are about to transfer another to the Georgetown University Hospital, which we feel will be of mutual advantage. Conferences in each center are conducted by volunteer physicians. They are held not less than three times a week. Our nurses cooperate with the obstetrical hospitals and the Health Department in visiting the new-born in the interests of the prevention of blindness.

We maintain no wards or dispensaries for sick babies. Such cases are referred to hospitals and dispensaries, and, during the Summer months, to the Baby Hospital Camp which is located in Rock Creek Park. We undertake no rural work.

II. Our work is entirely preventive and educational. We undertake the care and supervision of the theoretically "well baby." Instruction to the mothers along the lines of prevention of illness and disease is the paramount object. Remedial agencies must of necessity supplement these endeavors. Babies who are ill from digestive disturbances are treated in our welfare centers. Cases of illness other than those falling under this group are sent to appropriate hospitals and dispensaries. Our conception of preventive work is the application of educational methods to secure for the baby absolute health

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during its first two years. Inasmuch as the state of the digestive function contributes so largely to the attainment or the lack of attainment of nutritional perfection, we include supervision of gastro-intestinal conditions in our work of prevention. The sick baby, except as herein noted, falls outside the province of our ideas of preventive medicine.

III. The most important advance in our local work during the past year has been the elimination of milk dispensing at the various centers. This has not only materially reduced the cost of maintenance, but has permitted our nurses to give their entire time to the actual technical work and has relieved them of many details of administrative duty. We have found no falling off in the patronage of our centers as a result of this change. Provision has been made for the purchase of milk for those who are absolutely unable to pay for the same by relief giving agencies. The dispensing of milk is carried out on the order of the center nurse through the cooperation of a local milk dealer.

IV. We have no regular fee system. A "Mother's Auxiliary" has recently been organized; the dues are small and can be paid bi-monthly or yearly. We hold monthly meetings where we can have a talk on home-making subjects, or entertainments.

V. The work is financed by sustaining members, private contributions, entertainments, etc., through the activities of the Board of Managers, and very little public aid. It receives no municipal monetary support.

Summary of Post-Natal Work:

Number of feeding conferences held weekly	17
Total number during the year	845
Average attendance	20
Number of children cared for	2,289
Number of visits of instruction and for care of sick babies	13,913
Number of visits to centers	15,908

Summary of Prenatal Work: The prenatal department conducts five separate conferences for expectant mothers. Patients are encouraged to come every two weeks to conference and bring a specimen of urine. At one conference a Wassermann test is made on *every* patient and those showing positive reaction are followed up after the birth of the child. We are now making an effort to get all of our postnatal cases under dental care. The patients are visited every two weeks.

Our prenatal cases come chiefly from our own Infant Welfare Work, from the Associated Charities, Visiting Nurses, Social Service Nurses, a few from physicians and dispensaries.

Mothers registered during year ending Sept. 30, 1916	370
Average time under supervision and instruction	4 mos.
Average cost per patient	$3.29
Number delivered in hospitals	112
Number delivered in their own homes	149

The approximate average of still births per births for city during this period was 5½ per cent and for those under our care 2 months the average was 3.8 per cent.

As practically 100 per cent of our mothers are *able* to nurse their babies, the increase or decrease of breast feeding is an economic and not a prenatal question. If every mother had sufficient nourishment and was not obliged to leave her baby, and was then followed up by infant welfare nurse with constant encouragement and advice, the bottle fed baby would never be a problem.

We have never lost a mother.

Three cases have come to us in their first month before cessation of menses just on general symptoms of nausea and vomiting, etc.

JOSEPH S. WALL, M. D., *Medical Director.*
ESTELLE L. WHEELER, R. N., *Superintendent.*

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FLORIDA

INFANT WELFARE SOCIETY

Jacksonville

I. The principal activities of the Association include: prenatal, obstetrical and postnatal care, feeding conferences and hospital care for sick babies.

Thirty-three prenatal cases were cared for, 119 visits being made for these cases. Welfare conferences were carried on for a short time and many home visits were made, including visits to well babies. Number of follow-up visits to well babies 1,092; to sick babies 119.

A reorganization of the nursing service was effected last May, the various nurses amalgamating under the direction of the Health Department, and under the direct supervision of a supervising nurse.

IV. All work is done gratuitously.

V. The work is financed by voluntary subscriptions and by newspaper publicity.

C. E. Terry, M. D., *Secretary.*

ILLINOIS

INFANT WELFARE SOCIETY

Chicago

I. The activities of the Infant Welfare Society include: prenatal care, feeding conferences and home instruction. Forty infant welfare conferences are held each week. The total number of children under two years old cared for during the year ending September 30, 1916, was 86 per cent.

Prenatal instruction is given to the mothers of all registered babies when they are pregnant. No obstetrical clinic is maintained, but there is cooperation with the Chicago Lying-In Hospital and Dispensary and the Obstetrical Out-Patient Department of the Central Free Dispensary for this service.

II. Emphasis has been placed upon the preventive and educational features in our work.

III. The most important advance in the work of the Association was in getting a larger percentage of the babies at a much younger age.

IV. All work is done gratuitously.

V. The work is financed through the work of the Woman's Auxiliary, stereopticon lectures and appeals from the central office.

Henry F. Helmholz, M. D., *Medical Director.*
Minnie H. Ahrens, R. N., *Superintendent.*

MOTHERS' AID, LYING-IN HOSPITAL

Chicago

The Mother's Aid Club was organized in 1904 with a membership of eight earnest women. Today its membership is over eight hundred, and it owns property to the value of about $92,000, including the building which houses the Chicago Lying-In Hospital.

The work of the Mother's Aid Club also extends to the dispensary. Prenatal clinics are held six days in the week, at each of which from ten to twenty-five women are examined. The nurses come from every state in the union. There

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is a free training school affiliated with the hospital and dispensary, where they are taught to examine the patient externally, and to make rectal examinations; vaginal examinations are not allowed. They are taught to make blood pressure tests and urinalysis, so that they are quite capable of looking after patients in the absence of the doctors, or notifying the doctors in case of necessity.

During the time that the dispensary has been in existence about twenty thousand women have been cared for in their homes. Those that needed surgical treatment have been referred to the hospital and have been given that treatment there. 192 doctors have taken the course, 3,800 students have been given training, and four hundred nurses have received post-graduate training.

ANNA ROSS LAPHAM, M. D.

KENTUCKY

BABY MILK SUPPLY ASSOCIATION

Lexington

I. Our work consists in the feeding and care of babies from birth to two years; in instructing the mothers how to prepare the formulae in their homes, and on the importance of cleanliness necessary to keep the bottles and nipples clean, milk sweet and regularity in feeding. They are all visited once a week and more frequently when necessary. Friday afternoons conferences are held when the babies are weighed and formulae prescribed by one of the staff physicians. Sick babies, who can not be cared for at home, are sent to the hospital.

II. We find, by frequent visiting and calling in a physician in time, that we often prevent a serious illness which would probably end in death.

We regard the increased interest taken by the people of the city in our work. as one of the most important advances of the year.

IV. Most of our work is done gratuitously, but we encourage all who can to pay a little. People of moderate means sometime pay half price. We have a few in better circumstances wishing to obtain certified milk at the price we pay for it, and we arrange so that they get the milk through us.

V. We have an appropriation from the city of $100.00 a month. In the spring of 1916, the "Kirmess" given for the benefit of the Association was responded to liberally by the people of the community. We have found that voluntary subscriptions, dues, and other monthly reports, published in the papers, are all that have been necessary to carry on our work financially.

Summary of Post-Natal Work: Total number of children cared for during the year ending September 30, 1916, 180. Over twelve months, 46 white, 3 deaths; 24 colored, no deaths. Under twelve months, 39 white, no deaths; 71 colored, 7 deaths.

MARGARET LYNCH, R. N., *Supervising Nurse.*

THE BABIES' MILK FUND ASSOCIATION

Louisville

I. Activities: Prenatal care—obstetrical clinic; postnatal care— weekly clinics which are both feeding and medical when necessary; conferences between doctor, nurse, mother; home instruction, home observation and care by the nurses. No direct relationship with hospitals. The Children's Free Hospital accepts all cases recommended for hospital care. All cases of ophthalmia dis-

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covered are sent to City Hospital for treatment and reported to Department of Health. The accepted method of prophylaxis is followed in the obstetrical clinic. No rural work is done under the supervision of the Babies' Milk Fund Association.

II. Emphasis is laid upon prevention and education. We have had our greatest success through intensive home instruction and supervision of mothers by the nurses and instruction in care of well babies at the weekly clinics by the medical staff.

III. No important advance in work of Association during year, except the addition of another nurse to the staff.

IV. All of our work done gratuitously. No attempt whatever made to collect for services rendered; voluntary donations are however accepted.

V. Our work is supported as follows: One-third by annual appropriations made by the City Council and the County Court, two thirds by private contributions. These private contributions are obtained by means of an annual appeal in the form of a typewritten letter mailed in the spring, enclosing a complete condensed report of the work of the Association for the past year. This appeal is issued by the Finance Committee of the Board and no other soliciting is done, nor are entertainments, sales, etc., for the benefit of the milk fund allowed by the Board.

The work of the Association is brought before the public constantly by newspaper notices of our various activities, by an annual illustrated Sunday supplement to one or more of our leading newspapers, by talks before Parent-Teachers Associations, social centers and church societies, illustrated by lantern slides and by the equipment we use, including model infants' wardrobes, etc.

Last spring during the week of March 5, 1916, in collaboration with the other child-welfare agencies of the city, we conducted a most successful Baby Week with all the usual publicity features.

Summary of Prenatal Work: We maintain an Obstetrical Clinic. Clinics are held weekly. Patients are visited on an average of once a week.

Number delivered in hospitals, 3

Number delivered in own homes, 57

Average cost of caring for each patient, $9.12

Cases are referred to the Obstetrical Clinic through the Associated Charities, District Nurse Association, City Physicians and Settlements.

Total mothers registered during the year, 89

Average time under supervision, 2½ months

No stillbirths in Obstetrical Clinic during year.

Of the 60 deliveries

90 per cent breastfed up to the 3rd month or longer

10 per cent breast and bottle fed before 3rd month

No deaths of infants in first month of life.

No deaths of mothers caused in the Obstetrical Clinic during the year.

Summary of Postnatal Work: Total number of children cared for during the year ending September 30, 1916, 1,246

Five infant welfare conferences held each week. Average attendance at conferences, 13

Total number of visits to instruct mothers and to see that advice of welfare conference physician is carried out, and for care of sick babies, 14,967

Nursing care to 3 years—instructive supervision to 5 years. Many children remaining under our supervision to the 5 year limit come immediately under observation of school nurses in kindergartens of the public schools.

GAVIN FULTON, M. D., *Medical Director.*
ELIZABETH SHAVER, R. N., *Supervisor.*

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MARYLAND

BABIES' MILK FUND ASSOCIATION

(Maryland Association for Study and Prevention of Infant Mortality)

Baltimore

I and II. Activities included in the work of the Babies' Milk Fund Association:

Prenatal care
16 milk and welfare stations, 18 clinics weekly
2 obstetrical stations, 2 clinics weekly
Obstetrical care
Care of sick babies in their homes
Visits of instruction in the homes
Hospital care for sick babies
Rural nursing, through the Thomas Wilson Sanitarium

With the permission of the Health Department the Babies' Milk Fund Association nurses offer their services to the mothers of all registered babies under three years of age.

Emphasis is laid upon: the preventional and educational sides of the work; care of sick babies in their homes; hospital care for sick babies; obstetrical care.

III. Some recent advances are: Obtaining the permission of the Health Department to obtain the names of all registered babies.

An additional obstetrical station
Staff increased by assistant medical director
An additional woman obstetrician—2 additional women physicians
An assistant superintendent of nurses
Two supervising nurses
Four additional staff nurses

IV. Mothers who register at our obstetrical clinics are charged $5.00, but we allow them to pay as they can conveniently. All the rest of our work is gratuitous.

V. Budget—$25,000.00 annually—provided as follows:

$3,800 appropriation from the Thomas Wilson Sanitarium
$1,000 for the support of a station by the Scottish Rite Masons
$1,000 for the support of a station by the ladies of Roland Park
Balance raised through the Sun, the Evening Sun, the Alliance of Social and Charitable Agencies, and by voluntary contributions.

SUMMARY OF PRENATAL WORK FOR YEAR ENDING SEPTEMBER 30, 1916:

Cases are referred to the Association by the Health Department, physicians, hospitals, city agencies, individuals, etc.

The number of mothers registered for prenatal care during the year ending September 30, 1916, was 1,422.

The Association also maintains two obstetrical clinics, and holds two obstetrical clinics weekly.

Cases registered at the Association's obstetrical clinics are visited every ten days; other cases are visited once a month, if normal.

SUMMARY OF POST-NATAL WORK FOR YEAR ENDING SEPTEMBER 30, 1916:

The total number of children cared for during the year ending September 30, 1916, was 7,718.

Children over three years of age are referred to the Instructive Visiting Nurses' Association.

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The total attendance at the welfare conferences was 11,311.

The total number of follow-up visits to homes was 35,347, and the total number of visits for care of sick babies was 10,454.

J. H. Mason Knox, Jr., M. D., *Medical Director.*
M. Frances Etchberger, R. N., *Superintendent of Nurses.*

MASSACHUSETTS

BABY HYGIENE ASSOCIATION

(Formerly Milk and Baby Hygiene Association)

Boston

I and II. The Milk and Baby Hygiene Association was organized in 1909 and incorporated in 1910. On June 1 ,1916, the corporation voted to change the name to Baby Hygiene Association.

The Baby Hygiene Association confines its work to the care of babies during their first year. At 13 stations, 17 medical conferences are held each week, and 17 nurses visit in the homes and instruct mothers in infant care, feeding and hygiene. The work is conducted solely along preventive and educational lines, our aim being to "keep well babies well and to teach mothers motherhood." Sick babies are immediately referred to physicians and hospitals. Nurses not only refer sick babies but assume the responsibility of seeing that medical aid is actually received.

III. Recent advances: During the current year two new stations, each with one full-time nurse, have been opened. One station, with a half-time nurse, has been discontinued due to the closing of the settlement house in which it was located.

The number of babies cared for was 5,060, an increase of 381 over last year. This is more than 25 per cent of all the babies in Boston under one year of age.

The most striking fact in the comparison of our statistics for the last two years is that although the increase in number of babies cared for this year has been only 8 per cent ,the increase in conference attendance was 15 per cent and the increase in number of nurses' visits was 27 per cent over that of the previous year.

	Year ending Sept. 30, 1915	Year ending Sept. 30, 1916
Number of babies cared for	4,679	5,060
Number of well baby conferences	691	799
Conference attendance	24,014	27,669
Average conference attendance	34.7	34.6
Nurses' visits	51,101	64,395

IV. Milk, delivered either at the stations or at the home, is sold at cost, which is one to five cents per quart less than the regular retail price. With this exception all our work is done gratuitously.

V. Interest in our work is stimulated and our needs brought to the attention of the public by an annual report, appeals, printed and personal, and notices in the daily newspapers.

Total number of children under 12 mos. old cared for during the year ending Sept. 30, 1915	4,679
Total number under 12 mos. old cared for during the year ending Sept. 30, 1916	5,060

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It is impossible to give accurate figures for the number of deaths of babies under our care for the year ending September 30, 1916. Our mortality rate is based, not upon the number of babies who die while under our care but upon the number of deaths of babies under one year who have received milk station supervision. A baby may, for example, have been under our care for two weeks when three months old; should he die in his eleventh month, his death would be included in our mortality statistics. These figures are compiled from the death returns at City Hall. In the year 1915 we cared for 4,792 babies; of these 112 died before reaching their first birthday. It is of interest to note that while this investigation revealed 112 deaths, only 64 of these were known to us before this search was made.

VIII. The nationalities represented by the 4,792 children cared for in the year 1915 were:

American	1,250	Swedish	34
Italian	1,230	Scotch	31
Jewish	1,051	Armenian	21
Irish	457	German	18
Syrian	195	West Indian	17
Canadian	177	New Foundlander	15
Austrian	59	Dutch	13
Polish	57	French	11
English	52	Portuguese	11
Greek	50	Other nationalities	43

Of this number only 72 were colored.

(Figure based on nativity of mother.)

J. Herbert Young, M. D., *Director.*
Mary A. Jones, R. N., *Superintendent of Nurses.*

COMMITTEE ON PRENATAL AND OBSTETRICAL CARE OF THE WOMEN'S MUNICIPAL LEAGUE

Boston

The three clinics carried on by the Committee at the Peter Bent Brigham Hospital, on the edge of Roxbury; the Maverick Dispensary, in East Boston, and the Cambridge Neighborhood House, in Cambridge, have shown an increase in attendance of 30 per cent, 80 per cent and 100 per cent, respectively.

The majority of the cases are delivered in their own homes by our physicians, but not a few are given prenatal care by the Committee and attended at confinement by their own doctors; and those few cases requiring it receive hospital care. The prenatal care consists of visits at the clinics for medical advice—one when the patient first applies and another toward the end of pregnancy, with more medical visits under any abnormal conditions—and follow-up visits paid by the nurse to the patient in her home.

A charge of from $10.00 to $15.00 per patient pays for the services of both doctor and nurse. This charge is so small that all but the poorest women should be able to afford it—and unlike the system at the Boston Lying-In-Hospital where students do most of the work as a part of their training and consequently free of charge, this plan is adapted to any city.

Mr. Michael Davis, Jr., Director of the Boston Dispensary, has just carried out in five wards of Boston a most interesting investigation of the results of prenatal care. These results will shortly be published in the Boston Medical and Surgical Journal, but Mr. Davis has kindly given me permission to quote from them here.

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The investigation was undertaken for the years 1914 and 1915 and covered the two wards constituting East Boston and the three which make South Boston—the former a district where the Lying-in Hospital does not work and the latter one where it has been considerably developed. Prenatal care in both of these sections of the city was given in 1914 to 9.3 per cent of all births and in 1915 to 10.7 per cent, according to the standards developed by this Committee. The results are tabulated under four heads—stillbirths; the death rate under one week of age; under one month; and under one year—the latter only for 1914 because the babies born at the end of 1915 are not yet one year old—but all the other periods cover both 1914 and 1915.

The stillbirths for both years were only 2 per cent of the living births, just half that of the rest of the population. The rate of infant mortality for the year 1914 was 37.5 per thousand, whereas for those babies of the neighborhood not receiving prenatal care it was 109.3 per thousand—almost three times as large. The death rate under one week for 1914 was three times as high for the babies who had no prenatal care as for those who had, and the figures were in the same proportion for the deaths under one month. In 1915 at both ages the deaths of those having no prenatal care doubled the number of those who had. That this reduction in the death rate is due to prenatal care and not to that given after birth by milk stations and other agencies is shown by the fact that babies under one month of age almost never come under the care of these agencies, and the files of the Milk and Baby Hygiene Association show that less than 20 per cent of all the prenatal cases came under the care of that Association at any age; nor is there any other known agency in these wards which cared for any large number of these cases during these two years. Most of the cases, moreover, were from families with low incomes—over four-fifths of them receiving the care practically free—so that the surrounding conditions were in no way peculiarly favorable, nor was the intelligence of the mothers unusual.

The experiment in obstetrical care now being conducted by the Committee will be continued with the hope of eventually showing as satisfactory results as those shown by the prenatal experiment. If we can start our babies right I believe that we have done more for them physically than we can yet even guess at.

MRS. WILLIAM LOWELL PUTNAM, *Chairman of the Committee.*

INSTRUCTIVE DISTRICT NURSING ASSOCIATION

Boston

I. Activities included in the work of the Association:

Prenatal care every 10 days to about 3,000 patients a year.

Post-natal bedside nursing for 10 days after delivery, to about 5,000 patients a year.

Names of babies sent to the Baby Hygiene Association when 10 days old.

All mothers instructed to attend weekly conferences for well babies.

All cases of inflamed eyes in babies under ten days, reported to Board of Health, which responds promptly.

Beds always available for babies reported by this Association in two good hospitals for babies.

II. We consider our prenatal and postnatal nursing equally successful in development.

III. Recent advances in the work of the Association:

Increase of prenatal work in outlying districts, i. e., with private doctors. It is difficult to say whether this advance is more important than the steady increase of our prenatal work in general, throughout the year, in all the districts.

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IV. We charge no fee for prenatal nursing or for other preventive work.
We ask a fee up to $.50 whenever possible for our general nursing. We also receive $ .50 a visit from the Metropolitan Life Insurance Company for all visits to their industrial policy-holders.
In 1915 we discharged 12,913 patients. Of these:
465 paid $ .50 a visit
684 paid $ .25 a visit
2,011 less than $ .25
6,078 nursed free
3,675 paid by Metropolitan Life Insurance Company.

V. Our work is financed by donations, subscriptions, fees from patients, payment from Metropolitan Life Insurance Company; personal appeal in times of need.
Entertainments, fairs, lectures, etc., *not* given.
Direct personal appeals for large sums, most usual method of obtaining money.

MARY BEARD, R. N., *Director.*

MASSACHUSETTS MILK CONSUMERS' ASSOCIATION

Boston

The Massachusetts Milk Consumers' Association has this year no report to make. It is weary of recording the playing of politics with babies' bodies for a foot ball.

MRS. WILLIAM LOWELL PUTNAM, *Chairman of the Executive Committee.*

MAVERICK DISPENSARY

Boston

I. The activities of the Maverick Dispensary include, prenatal, obstetrical and postnatal care. There is also a general medical clinic, including infants' except feeding cases, which are referred to the Baby Hygiene Association; a local tuberculosis clinic; dental clinics, eye clinics, etc.

II. Emphasis is laid upon the remedial, preventive and educational features of the work.

III. The most important advances in the work of the Dispensary are: The use of the Wasserman test in the prenatal clinic; the opening of a local clinic for tuberculosis, in which the families of tubercular patients of East Boston are examined as well as the suspected cases. For complete diagnosis, the actual tubercular cases are sent to the Boston Consumptives' Hospital out-patient clinic, whose nurses do the nursing for our clinic. The Boston Association for Relief and Control of Tuberculosis paid the salary of an expert physician. Our dispensary completes this cooperation by furnishing the quarters and considerable social service work.

IV. The cost of prenatal care and nursing, attendance at confinement by physician, and postnatal care is $10.00. This amount is divided in the following way: to the doctor, $5.00; to the Instructive District Nursing Association, $2.00; to the Maverick Dispensary, $3.00. Our patients have averaged $7.00 to $8.00.

For ordinary attendance at our clinics we charge 20 cents. Medicines, etc., 10 cents.

V. Our work is financed by the issuance of an annual appeal. Personal letters are often sent with the report.

A. B. EMMONS, 2ND, M. D., *Medical Director.*

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THE SOCIETY FOR HELPING DESTITUTE MOTHERS AND INFANTS

Boston

I. The aim of our Society is to help a mother keep her baby in her personal care. Some apply before the birth of the baby and prenatal care is arranged for at the dispensaries or out-patient departments of the hospitals. When discharged from the hospital we place mother and baby to board in private families, for convalescence. Each applicant is dealt with according to the needs of the case. Some are placed with their babies in private families where the mother does the housework. Her wages vary with the work required and her ability. Our visitors supervise and remain in close touch with many for years.

IV. The work is done gratuitously, but parents, relatives and friends are encouraged to contribute to the needs of the applicant, whenever they are in a position so to do.

V. The work is financed through our annual report and occasionally by personal appeals. The work is advertised weekly in "*The Boston Evening Transcript.*"

MISS E. M. LOCKE, *Agent.*

AVON HOME

Cambridge

Applications for 271 families involving 467 children have been received by us during the last year, carefully investigated and planned for as wisely as we could. One hundred and ten were admitted and placed in the Avon Home boarding homes, 53 were referred to other societies, as they had no Cambridge connection. We keep in touch with each case, to make sure the applicant is being cared for.

In addition to the children who are in our boarding homes, we are superintending, advising and in various ways caring for over 300 more in their own families, and have had charge in our boarding homes of 302 Country Week children and 22 mothers between the dates of June 29th and September 14th; thus we have cared for in our boarding homes during this year 479 children and 22 mothers. When a boy or a girl is discharged from one of our boarding homes and returned to his own family, we see him within two weeks and then at regular intervals for the first year; after that as often as it seems wise in each case. We try to keep these children in school as long as possible and are often able to induce them to enter the trade schools. We are always glad to get them into classes at the Y. W. C. A. and the Y. M. C. A., both of which societies give us strong cooperation.

We are constantly adding to our number of boarding homes. Each home is carefully investigated before a child is placed there. The registration of each boarding home by all the child-placing societies with the Confidential Exchange is a great help and safeguard.

Not only are all our children visited every month by our paid workerrs, but the Trustees of The Avon Home also visit regularly every child at board, which enables the Trustees to know each child and home personally.

This year no child at board has died, and only five among our hospital children. The plan entered upon by The Avon Home last year of paying for two beds at the Infant's Hospital has been continued this year with great success and an increasing demand. Our ability to take the sick babies from the hospital to one of our own convalescent homes is a great gain as it is seldom that a child should be allowed to return to its own people on leaving the hospital. By being able to give both hospital and convalescent care, we can return the baby to its family in perfect health.

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Each child is carefully examined in every way before being accepted. Mental and physical troubles are noted and watched. Any child needing an operation of any kind is promptly taken to the proper hospital. We have secured admission for three children to the Feeble-Minded School this year, one to the Crippled Children's School, one to Monson Epileptic Hospital and two to a Tuberculosis Hospital.

MISS E. O. STANNARD, *General Secretary.*

INFANT HYGIENE ASSOCIATION

Holyoke

I. The activities of the Association include the modification and dispensing of modified and whole milk; postnatal care, including visits to homes and attendance of mothers at weekly clinics; prenatal care.

II. Features developed with the greatest success:

Preventive:

Furnishing clean milk.
Personal instruction of mothers at their homes.
Instruction of mothers and oversight of babies at weekly clinics.
Distribution of literature, and articles in the press.

Remedial:

Preparation of formulae, according to orders of a physician. Home nursing in some cases.

III. The most important advance in our work is the engaging of a second trained nurse to help in visiting patients in their homes. We also held a Baby Week Campaign in May with an exhibit, free to all interested.

IV. All work is done gratuitously. Parents pay for the milk, a price sufficient to enable us to employ two visiting nurses, otherwise the sum alloted to us by the city would not cover the expenses.

V. The city defrays the entire expense of our work. Work is brought before the public by press notices, and particularly by a Baby Week Campaign held in the City Hall in May, 1916. In connection with this there was an exhibit and a baby parade.

Summary of Post-Natal Work: For year ending September 30, 1916.

The Association holds one clinic for mothers each week. These clinics are well attended, the average attendance being fourteen. The clinics had to be stopped for nearly two months during the summer on account of the epidemic of poliomyelitis.

1,726 visits were made in homes during the year, for instruction of mothers and to see that the advice given at the clinics is carried out. This is considered by all means the most important part of the work.

The Association includes children beyond the age limit in its follow-up work.

FRED. H. ALLEN, M. D., *Medical Director.*

MICHIGAN

CHILDREN'S FREE HOSPITAL

Detroit

I. Provision is made by the hospital for care of sick children; special care of children suffering with ophthalmia neonatorum; special care of feeding cases, and instruction to mothers in our out-patient-department.

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II. So far we have been concerned more with the remedial part of the work, but we are trying to do more educational work each year and we are now establishing a diet kitchen in our out-patient-department where mothers may be taught to prepare their babies' food and where some instruction in the nursing care of babies may be given.

III. Most important advances during the current year:

Better nursing care in the hospital; increased social service follow up work; increased facilities for out-patient work.

A room especially adapted for the care of babies with pneumonia has been added to the infant ward.

A diet kitchen has been fitted up for teaching purposes and formula work.

The Board of Education has supplied a teacher who gives instruction to the children, who by the nature of their ailments are obliged to remain a long time in the hospital.

The Board of Health has maintained a nurse in the Babies' Clinic of the Dispensary, who has charge of all babies under 18 months of age.

IV. During the past year we have asked the parents to pay small amounts according to their means for the care of the children in the hospital. They have also been asked to pay ten cents for each new ticket issued in the out-patient department, if the registrar considered they were able to do so. Many have paid a small amount for prescriptions. This being the only children's hospital in Detroit, we are obliged to do for many children whose parents are not wholly in need of charity.

V. We have an endowment the interest from which furnishes about one-fourth of the support necessary. This past year the city has allowed us about a third of our expenses, and the rest is given by individual contributors and by the several associations that work for the hospital. We are about to conduct a quiet campaign for funds for additional buildings and an increased endowment.

SUMMARY OF YEAR'S WORK:

During the year ending December 31, 1915, the hospital cared for 7,399 patients. Of these, 1,816 were admitted to the beds of the hospital, the remainder being cared for in the out-patient-department.

The total number of days' treatment given in the hospital was 35,960, the daily average of patients being 98½. Comparing these figures with those, of last year, we find a total increase of 2,416 patients treated, 457 of which were admitted to the hospital.

We do not measure our results by our death rate. Many children are in a dying condition when taken into the hospital, but they are made as comfortable as possible, and no efforts are spared even though it is apparent to all that they cannot recover.

Of the cases discharged, 1,356 were either recovered or improved.

The cost of caring for a patient in the hospital was about $1.55 for one day. The average stay of a patient is twenty-one days.

One of the most important works is that of our eye ward, where cases of gonorrheal ophthalmia are cared for.

Of the 46 cases treated, 32 were discharged cured and with perfect eyesight. All cases that were admitted with their eyesight unimpaired were cured. Some unfortunate little ones were too late for us to do more than to cure the disease, and when one eye only was affected, prevent the infection of the well eye.

There is only one other hospital in the State of Michigan which maintains a ward for the treatment of these cases.

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MINNESOTA

INFANT WELFARE WORK, DULUTH CONSISTORY SCOTTISH RITE MASONS

Duluth

Activities included in the work of our Association: Postnatal care, feeding conferences, hospital care for sick babies, and milk stations.

Our work is done gratuitously for all mothers. Those able to pay are advised to go to their own family physician.

The work is financed by the Duluth Consistory Scottish Rite Masons. No appeals are made to the public.

Summary of Postnatal Work for Year ending September 30th, 1916.

Infant welfare and feeding conferences: The feeding conferences are twice a week in three districts, making one every day a week, excepting Sunday. Babies are weighed and examined by the physician and nurse assisting.

The conferences are held during July, August and September. We had an attendance of 349 babies.

Home visits to instruct mothers and to see that advice of welfare conference physicians is carried out.

The sick babies are sent to the hospital.

Number of visits made by nurse for the year ending September 30th, 1916, 2,777.

Total number of children cared for in 1915, 600; in 1916, 723.

Whole milk is distributed in three districts with nurse in charge. Those who are unable to pay receive it gratuitously. The Scottish Rite Masons pay ten cents a quart, and we sell it at seven cents a quart. The nurse visits the homes and modifies the milk according to the physician's instructions.

ELIZABETH HEIKKILA, R. N., *Consistory Nurse.*

INFANT WELFARE SOCIETY

Minneapolis

I. Activities included in the work of the Association: Some prenatal calls, postnatal care, feeding conferences, arrangements with hospitals for care of sick babies.

II. We are developing the preventive and educational work with the greatest success. In carrying out this campaign of education we conduct the conferences at the stations, where advice is given about feeding; mothers, meetings at which a lecture is given by a physician, are held once a month at each station, and our nurses call in the homes to see that the advice of the doctors is understood and caried out, and to help as they can in teaching the care of the baby.

III. We regard the opening of a fifth station as the most important advance in the work of the Association during the current year.

IV. We make no charge for the advice given by our doctors and nurses, but wherever a mother wants to help we let her enroll her baby in the Babies' Auxiliary of the Infant Welfare Society for one dollar.

V. Last year our Baby Week exhibit brought the needs of the infant welfare before the public. At that time we had some very good publicity in the newspapers also. In raising money we send out letters stating the needs and asking for support.

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Summary of Post-Natal Work, for year ending September 30, 1916.

The total number of children cared for during the year ending December 31, 1915, was 1,648, and during the nine months ending September 30, 1916, was 2,320.

The total number of deaths of babies under two years of age while under the care of the Association, for the year ending December 31, 1915, was 25, and for the nine months ending September, 1916, the total number was 22.

The Association holds nine welfare conferences each week, the average attendance at these conferences being seventeen.

A total of 11,067 home visits to instruct mothers and to see that advice of welfare conference physicians is carried out, was paid by the Association.

F. W. SCHLUTZ, M. D., *Medical Director.*

BABY WELFARE ASSOCIATION

St. Paul

I. Activities included in the work of the Association: Prenatal care, arrangements for obstetrical care, post natal care, feeding conferences, and hospital care for sick babies. Two prenatal clinics are held twice each week with doctors and nurses in attendance. Prespective mothers are urged to register as soon as possible, and are visited and given instructions during the term of pregnancy. In cases where it is possible not to go to hospitals, for her confinement, arrangements are made whereby she can be cared for in her home, a doctor and nurse being provided, sterile dressings etc., being furnished. After confinement the baby is registered, and supervised throughout its first two years. A ward for sick babies is maintained at the Bethesda Hospital.

II. The majority of mothers who visit the clinic for the first time, come because the babies are ill, and need medical attention, but we find that practically all of these mothers will return with a second baby as soon as they are able to be out after confinement, certainly sometime during the first month, as they have found by experience, that it is easier to keep baby well, than it is to care for a sick child.

III. The most important advance during the current year is, I think, the establishment of the prenatal clinics twice a week, and the provision we are able to make for the mother, at the time of her confinement.

IV. All the work of the nurses is done gratuitously. If the mothers' are able, we expect them to pay for medicines prescribed. Where the services of a doctor are desired at the time of confinement, if the circumstances of the family permit, they are expected to pay a small fee; not to exceed $10. If they are unable to pay anything, the doctor is furnished free of charge.

V. The work of this organization is financed entirely by volunteer subscriptions. The money being raised by the Finance Committee. No entertainments are given, but a direct appeal is made in a personal visit, by one of the committee.

Summary of Prenatal and Post-Natal work, for year ending Sept. 30, 1916.

Prenatal:

Cases are reported to the Association from the hospitals, the United Charities, and Organizations of Relief. Some of the people come voluntarily, having been told by others.

Prenatal clinics were started in July. During July and August 34 cases registered.

Obstetrical clinics are held twice each week at the Central station. Cases are visited once in two weeks, and in many cases oftener.

The clinic has been in operation so short a time, that it is impossible to give data as to the effect of the prenatal work.

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Post-Natal:

Clinics are held three days each week , the average attendance being 30.

The total number of home visits paid during the year to instruct the mothers and see that advice given at the clinics is carried out, was 9,161.

During the year, 2,115 home visits were paid for the care of sick babies.

MARGARET B. LETTICE, R. N., *Supervising Nurse.*

INFANT WELFARE COMMITTEE OF THE MINNESOTA PUBLIC HEALTH ASSOCIATION

St. Paul

Beginning July, 1915, surveys were made of the various counties and the three large cities to determine the more important factors affecting infant mortality. The result is shown in the accompanying tables marked 5(a) and 5(b). (This study was based on the United States Census Report for the year 1913).

Registration of births was found deficient in 37 counties. No doubt this condition has improved to a remarkable extent, due in part to the educational propaganda conducted throughout the state, and in part due to the registration tests made by the various women's clubs.

An attempt was made to determine the safety of the milk supply of the larger cities of the state; Duluth and Winona are apparently the only two cities of the state which have anything like an adequate supervision of the milk supply.

An attempt was made to determine the percentage of births attended by midwives in the various counties and cities.

In Minneapolis the percentage attended by midwives was 20 per cent (1915); in Duluth the percentage was 13 per cent (1914). The percentage attended by midwives in other parts of the state was not obtainable from the office of the State Board of Health, or from local health officers.

During July and August numerous women's clubs were furnished with material on the care of the baby and other child welfare activities. All health officers of the state were canvassed to see if they would distribute a "Care of the Baby" pamphlet for each birth certificate received; about twelve health officers volunteered to distribute these pamphlets.

Six stories for publication pertaining to infant welfare work were released during the summer months. The infant welfare exhibits and baby contest held during State Fair Week, under the supervision of Mrs. Lettice, of our Infant Welfare Committee, were very successful.

Some two dozen towns of the state held baby week celebrations during the week of March 4 to 11, 1916. Exercises were also held in a number of village and rural schools. All told the Minnesota Public Health Association has had requests for material from approximately 200 federated clubs, in addition to about 100 requests for material from other sources. This would indicate that, not counting the rural and village schools which held baby programs, baby welfare exercises were held in about 500 communities.

This Association's two demonstration nurses have assisted to date in over a dozen local programs. Many more requests to give addresses at baby welfare programs were received than could be filled. Quite a number of Twin City physicians and nurses willingly devoted their time and filled a number of these engagements.

I. J. MURPHY, M. D., *Executive Secretary.*

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NEW JERSEY

THE CHILD FEDERATION

Atlantic City

I. The activities of the Child Federation include pre-natal and post-natal care. Obstetrical care is given by the Visiting Nurse Association.

II. Especial emphasis is placed upon the preventive and educational features of the work. Included under these headings we give instructive talks in the homes, care to sick babies and distribute literature.

III. The most important advance in the work of the Association has been the establishment of the baby clinic in the Atlantic City Hospital and the work of the baby welfare nurse.

IV. Part of the work is done gratuitously, and a small charge is made to the mothers of moderate means, who are willing and able to pay for the services rendered by the nurse. This amounts to from 5 cents to 50 cents, according to the means of the family.

V. The work is financed by voluntary subscriptions, membership in The Child Federation, teas, card parties and press notices.

SUMMARY OF PRENATAL AND POST-NATAL WORK FOR THE YEAR ENDING SEPT. 30, 1916

PRENATAL:

Cases are reported to the Federation by physicians, gynecological clinic of the Atlantic City Hospital, friends, prospective mothers themselves, and the Organized Charities. During the time from April 10 to June 30, 1916, four mothers registered. The average time that these mothers are under supervision and instruction is three months.

Prenatal patients can be referred to the gynecological clinic of the Atlantic City Hospital, where clinics are held three times a week.

Patients are visited every two weeks. Two cases were delivered in their own homes and one in the hospital.

POST-NATAL:

Baby clinics are held at the Atlantic City Hospital, the clinics being held three times a week.

A total of 196 home visits to instruct mothers and see that advice given at the welfare conference is carried out, was made. The baby clinic has been in operation only five weeeks. Most of the work done has been through instructive home visits to mothers, who are not yet thoroughly acquainted with the work of the baby clinic.

The number of home visits for the care of sick babies, from April 10 to September 30, was 511.

The school nurse is used in following up children beyond the age limit.

ANNE H. WETHERILL, R. N., *Supervising Nurse.*

DIVISION OF CHILD HYGIENE, HEALTH BUREAU

Jersey City

PRENATAL:

I. Organized in 1914.

Owing to limited staff and vast amount of work required to establish our infant welfare stations, no systematic prenatal work was done until the present year. Patrons only of the welfare stations come under prenatal care. Few

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were brought to our attention by patrons of the stations. Average length of time under care was 4½ months. Mothers were visited every ten days up to the seventh or eighth month and weekly up to date of confinement. Ninety-two prenatal cases were registered.

Eighty-five per cent of mothers, whose previous child was bottle fed, were able and did nurse the new baby.

POST-NATAL: Mothers are encouraged to register their babies at the Infant Welfare Stations. Every day except Sundays and holidays a physician trained in infant feeding is present at the clinic from 9 A. M. to 1 P. M.

After the baby has been weighed and measured and given a thorough physical examination, the mother consults with the physician and nurse. Records of the history of each child are kept at the station. Mothers are given individual instruction at the station and home visits are made by the nurse to carry out the instruction, to give demonstrations of the home modification of milk and to act as sanitary inspector for the Bureau of Health.

Classes for the Junior Welfare League (pupils of the parochial schools) are held twice a month at the Welfare Station. Once every week during the summer months, cooking instruction is given by a trained dietitian to these little mothers. Lectures on home economics and the care of the baby are included in our program of education.

Once a week cooking classes are held and demonstrations given by our dietitian to the mothers registered at the station. The course of instruction embraces the feeding of the child from weening up to and including six years.

These classes have contributed in a great measure to the success of our welfare work among the mothers.

Only illnesses due to dietetic disorders come under our care. Others are referred to the family physician, or to the hospital or dispensaries.

At each Welfare Station, a milk contractor operating under a permit, granted by the Bureau of Health, and obtained by competitive bidding in accordance with very exacting specifications, dispenses Grade "A" raw milk (tuberculin tested) each day of the year from 9 A. M. to 12 noon. Only patrons of the welfare stations are supplied. The price prevailing is 9 cents per quart. Frequent tests are made by the Bureau chemist and bacteriologist to insure the quality of the supply.

The staff includes one medical director, one physician, one dentist, five field nurses (registered graduates) all paid and under civil service designation. Also a trained dietitian. On December 1st, 1916, one physician and two nurses will be added.

The city has been recently divided into districts. Each welfare station takes under supervision babies of a district. At present we have two Infant Welfare Stations. On December 1st one more will be opened.

Average number of babies under care of each nurse 376. Most of our babies are brought to the station by mothers, relatives or friends. Two per cent are referred by physicians.

July 21st, 1914, till October 1st, 1915, 910 mothers were instructed. From October 1st, 1915, to October 1st, 1916, 1,301 mothers were reached.

The number of babies under supervision has increased each year:

July 21st, 1914, till October 1st, 1915, 1,024 babies registered.
October 1st, 1915, to October 1st, 1916, 1,462 more babies registered.
Children from 2 to 6 years of age, 288.
The age limit is 6 years.
The attendance from October 1st, 1915, to October 1,, 1916, was 10,276.
Home visits by nurses, 13,816.
Cooking class, 376 mothers graduated during the past six months, that is, from April 1st to October 1st, 1916.

Our organization is the only one in the city engaged in Baby Welfare work.

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No distinction is made between mothers of limited means, and those more favorably situated financially. As our work is educational, we strive to reach all mothers.

The Division of Child Hygiene cooperates with the county tuberculosis clinics, the Bureau of Municipal Relief, City Hospital and Dispensaries, Day Nurseries and various Relief Agencies.

The work is supported by municipal appropriation.

From 1914 to 1915	$ 2,000
From 1915 to 1916	8,600
From 1916 to 1917	13,200

Estimated population of Jersey City, 300,133. City is now organizing Bureau of Vital Statistics. Birth and death rate of babies not available. Our city is not in the registration area.

Getting in touch with babies under one month of age, and enlarging our prenatal activities are our most difficult problems.

M. W. O'Gorman, M. D., *Chief of Division of Child Hygiene.*

THE BABIES' HOSPITAL

Newark

I. Activities included in the work of the hospital:
- Care of sick babies
- Three out-patient medical clinics
- One orthopedic clinic
- Seven infants' consultations in social centers and school buildings
- Hospital social service by registered visiting nurse
- One milk dispensary administered in the hospital

II. The objects of the hospital place emphasis on the remedial features of infant welfare. The sick child and its hospital treatment. Eighty per cent of the hospital cases are acute and chronic nutritional diseases. Fifteen per cent are acute diseases of the respiratory tract and the remaining five per cent are chiefly surgical. The educational features of our work include training school for infants' nurses, conferences for mothers with infants, home instruction of mothers and distribution of educational literature.

III. The most important advance during the current year is the establishment of open air clinics under tents and trees to avoid congestion and grouping in the clinic rooms.

IV. The entire work is gratuitous. A few hospital cases pay half board, half of one per cent. Ten beds are supported by city funds.

V. Our work is financed by contributions of directors and managers, collections by managers and public entertainments.

Infant Welfare Conferences for year ending September 30, 1916: Seven infant welfare and feeding conferences are maintained by the Association, eleven being held each week. The average attendance at these conferences is from 15 to 30.

The total number of home visits for the instruction of mothers for the year was 1,834.

Three hundred home visits for the care of sick babies were paid during the year.

Henry L. Coit, M. D., *Medical Director.*

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THE DIET KITCHEN OF THE ORANGES

Baby Welfare Committee

Orange

I. Organized in 1895. Baby welfare work started in 1906. The activities included in the work of the Society are: milk dispensary, baby welfare conferences, prenatal and post-natal care, and Little Mothers' classes.

II. and IV. Home visiting and instruction in baby care and feeding seem to be the most vital feature of the work. If babies are sick, home care is given if possible, by frequent visits of nurse helping and supervising the mothers. Nurses visits are entirely free, but the milk is paid for if possible.

V. The work is supported by voluntary contributions. No entertainments are given. Funds are raised by special appeal, letters, etc.

The age limit of babies cared for is two years.

Baby welfare work has been districted, and the Diet Kitchen now takes charge of babies in two districts of Orange; 245 babies have registered in the last 11 months; 8 deaths have occurred. The doctors give their services at the welfare conferences. One nurse is employed full time, and a second nurse on part time. One welfare conference is held in each district weekly. The same nurse takes charge of prenatal and post-natal work. The prenatal cases are found chiefly in making baby welfare calls. No clinics are held. Visits and advice have been very helpful in the few cases reached. This branch of the work is not developed sufficiently. The nurse has made 2,144 calls in the homes of babies, sick and well.

EMMA A. SPENCER, *Chairman.*

BABY WELFARE ASSOCIATION OF THE ORANGES

The aim of the Baby Welfare Association is to standardize the work done in our four municipalities. In that way it differs from similar organizations. The total population of the four municipalities is aproximately 100,000. We have five different organizations, two of which are the City Health Departments, and three are private organizations. There are six full-time nurses and five physicians, and last year we came in intimate contact with two thousand babies. Our death rate among the supervised babies is about half of the total death rate among babies.

JOHN HALL, *Secretary.*

NEW YORK

SCHOOL FOR MOTHERS

Albany

I. Organized April 1, 1916. The School provides prenatal care, and instruction in feeding infants.

II. We have succeeded in having many well babies brought each week to be weighed, the mothers taking kindly to the teaching that normal increase in weight *positively noted* is more wise in the prevention of disease than guess work. In some instances the mothers have come to the nursery with their babies and spent the day receiving instruction and learning what a schedule is. Two of these made spectacular improvement. We make no effort to take the place of hospital work. The mothers are taught to prepare the babies' feedings and to give them at regular intervals.

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We have been asked by the State College for Teachers to give their students a half day's care of an infant and necessary instruction.

III. Most important advance during the current year: A course in home nursing to mothers.

IV. All our work is done gratuitously.

V. The work is financed by private philanthropy.

SUMMARY OF PRENATAL AND POST-NATAL WORK FOR YEAR ENDING SEPT. 30, 1916.

PRENATAL:

Cases are reported to the School for Mothers by the Brady Maternity Hospital, the Albany Guild for the Care of the Sick, and by patients themselves. Five patients registered during the six months preceding September 30, 1916.

Obstetrical clinics are held once a week.

POST-NATAL:

There are no organized welfare conferences, all instruction being individual.

Forty home visits for the instruction of mothers were made. The visiting is limited because of the care of infants in the nursery.

Ten visits in the home for the care of sick babies were made.

There is no system of follow-up care of children beyond the age limit.

MARGARET T. ARNETT, R. N., *Nurse in Charge.*

CHILD WELFARE ASSOCIATION

Batavia

The child welfare work was organized in Batavia, October 1st, 1914, under the direction of the City Department of Health, which is under the New York State Department of Health. We have a Child Welfare Association composed of a group of women with a board of fifteen directors, who look after the details and the financial end of the work. Since October 1, 1915, we have had an appropriation of $500.00 from the city. the remainder being raised by the ladies from annual dues, which are $1.00 a year and personal contributions from people who are interested in the work.

Activities included in the work of the Association: Prenatal instruction, obstetrical care during confinement, hospital care of sick babies.

The work is all done gratuitously. Our budget for the past year was about $800.00. During the year ending September 30, 1916, one nurse has been employed.

2,990 Visits have been made	Station	170 Babies have been cared for
1,421 Visits to well babies	Attendance:	76 Babies have been enrolled
521 Visits to sick babies		4 Babies have died
301 Prenatal visits	346 Mothers	108 Italian
	309 Babies	40 American
	317 Others	9 Poles
	972 Total	3 Jews

Thirteen Little Mothers League Meetings have been held; 505½ quarts of milk have been dispensed free. Since August 1st, 1916 the clinics have been in charge of Dr. Edith F. Ryan. Previous to that date we had no regular clinic at the station.

LOUISE B. WILLIAMS, R. N., *Supervising Nurse.*

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CHILD WELFARE ASSOCIATION

Binghamton

The Child Welfare Association of Binghamton, New York, was organized June 24th, 1913; incorporated under the laws of the State of New York in October, 1915, and joined the State Federation of Women's Clubs in September, 1916.

We still combine a Woman's Rest Room with the health center or Child Welfare Headquarters, and an important advance in our work this year was securing larger and more commodious rooms for a permanent location of the Association, into which we moved April 1st.

An average of about 225 children is under supervision, and ages range from birth or a few weeks to five years, and in some special cases, like blind or crippled children, much older than that. The children are brought as regularly as possible to the headquarters and there examined, weighed, height measured and any defects pointed out to a mother, a record made of the case and advice and instruction given. When medicine is needed, they are referred to their family physician, or if they have none, to one of the doctors who give their services when needed. Two physicians have just been appointed from the Homeopathic Medical Society, and two will be appointed from the general Medical Society to act as an advisory committee and assist in any way possible.

The prenatal work has proved very helpful. Advice and instruction are given the women in a friendly way by the superintendent, a model layette is shown them and patterns and books loaned. We see that a nurse is engaged, and help secure or send one for emergencies.

"Baby Week" was celebrated in March by giving the two playlets "The Theft of Thistledown," and "The Narrow Door," supplemented by a talk on Child Welfare work. Slides were shown at the Opera House, and special articles printed in the papers.

Mothers who are able to do so pay $1.00 a year and become active members of the Association, but those who cannot pay are enrolled free. A small part of the funds is raised by these memberships, and the remainder contributed by the Rotary Club. We have never received any appropriation of public money. The budget for last year was $1,266.00.

Most of the work is done at the headquarters, as the superintendent has no one to assist her except on special occasions, like contests or entertainments. She frequently gives talks at mothers meetings or other clubs on the care of children or the work of the Association. Calls can only be made on the most urgent cases, as it is impossible for one person to do everything. It is planned to have an assistant as soon as the needed funds can be raised.

Thirty girls were instructed in the care of a baby, in the Little Mother's League.

The total number of births in Binghamton in 1915 was 1,433, including 55 still births, and the total number of deaths of children under one year old was 179, not including the still births.

The population according to the 1915 census was 53,668.

Surgical cases are sent to the City Hospital, when necessary.

We do not distribute milk, but teach the mothers how to modify it at home, and keep in touch with them to see that the instructions are carried out. If they are destitute, arrangements are made with the City Bureau of Charity to supply the needed amount, which is delivered to them by the milk man.

The strict quarantine enforced here because of the danger of infantile paralysis this summer has made the attendance at the headquarters smaller and interfered considerably with the work, as out of town mothers could not bring their children inside the city limits, and those of the city were kept as closely at home as possible.

The attendance at the headquarters for the year was 7,248.

VIOLA M. LEE, *Superintendent.*

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DISTRICT NURSING ASSOCIATION

Infant Welfare Division

Buffalo

I. Activities included in the work of the Association: Thirteen well-baby clinics held weekly in cooperation with the Department of Health, and follow-up field work; demonstrations in preparation of food and general care of baby given in the homes; prenatal instruction in the homes and one clinic entirely District Nursing Association. Three clinics in cooperation with health centers of the Department of Health. The postnatal work is done by another division of nurses in the Association.

II. In the infant welfare division we specialize in preventive and educational work.

III. The most important advance in the work of the Association during the current year was the amalgamation of our six clinics with the Department of Health clinics making 13 in all, all the nursing care of the clinics being the District Nursing Association. The physicians are under the direction of the Department of Health.

IV. No charge is made in the infant welfare division.

V. The work is financed through an annual money raising campaign. The District Nursing Association also has capital accumulated by legacies.

MRS. ANNE L. HANSEN, R. N.,
Nurse-in-Charge of Infant Welfare Work.

BABIES' DAIRY ASSOCIATION

New York City

Babies' dairies are practical feeding stations for the preparation of modified milk for sick infants. The first dairy was opened in June, 1908.

There are now three dairies situated in the most crowded sections of the city. The death rate has been less than 4 per cent of the patients treated.

The cost of conducting a dairy is about $1,200 a year, and in each from forty to fifty babies a day, after careful examination by the physician, can be supplied with proper food, which is prepared by the nurse in charge. The feedings necessary for a period of twenty-four hours are placed in separate bottles, packed in ice and enclosed in refrigerator boxes especially constructed for the purpose. The success of the dairies is largely due to this special care in preparation and distribution. Home visiting by the dairy nurses, and careful instruction as to the care and feeding of babies, form an important part of the work.

Since 1908 over two thousand infants have been cared for by the Babies' Dairies. These cases would have been separated from their families and sent to hospitals had it not been for the specialized care we have been able to give them. The per capita daily cost in the dairies is about twenty cents, as compared to a hospital cost of over one dollar, and few, if any, hospitals treating similar cases can show as low a death rate.

From the beginning we have tried to make the dairies real health centers, rather than milk stations, and it has been our aim to make them models for others who are engaged in welfare work. The city of Stamford, Conn., sent its health officer to us last summer, and later sent its supervising nurse for

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special training at the 41st Street Dairy. The Stamford station, modeled on ours, has been in successful operation during the past summer, and will continue to operate during the winter. Similar stations have also been established at Paterson, New Jersey, and Troy, New York.

While I would not belittle the value of increasing the number of dairies, yet I feel it is of vast importance that we should keep our present work up to a high standard, rather than try to care for a large number of babies. From the first we have tried to do intensive work, and I think that such work is of great value as an object lesson to mothers and workers. I feel that private philanthropy should blaze the way for public welfare, and it is much better for the municipality to follow our lead than for us to care for a large number of cases. I hope that ultimately the City of New York will be able to carry out so efficiently the work of feeding infants that we will be able to turn our attention to some other undeveloped field, for instance, that of feeding the mothers of nursing infants.

At present, however, I feel that we should continue to emphasize the points for which we stand, namely, the home care of infants suffering from nutritional disorders, and the feeding of such infants with food individually prepared and prescribed.

REUEL A. BENSON, M. D., *Medical Director.*

BABIES' WELFARE ASSOCIATION

New York City

I. Activities included in the work of the Association: In all case work, the Babies' Welfare Association acts only as a transferring agency between the field worker and the organization to which the case is referred or vice versa. The cases referred to the Association during the year covered every type imaginable. The largest class are maternity cases referred to us on discharge from the maternity hospitals for after-care and in this way put under immediate supervision of the milk stations.

II. The following statement refers to the nurses, social workers, organizations, etc., rather than to the cases handled: The object of the central office of the Babies' Welfare Association in maintaining a clearing house for baby cases is to prevent duplication of effort and waste of time, and to educate all workers and organizations to the point where it is practically impossible for them to let a case fall unheeded when there are any other facilities in the city for handling same.

III. The most important advance in the work of the Association during the current year: The development of the plan for systematic after-care of discharged maternity cases which provides supervision for the mother and child during its first month of life when the highest mortality occurs.

IV. All the work of this Association is done gratuitously.

V. Our work is financed by reports and letters of appeal.

SUMMARY OF YEAR'S WORK.

Active cooperation has been maintained among 100 organizations. Over 8,000 cases have been handled through the central office for social workers and nurses.

The central office has acted as distributing center for 50 organizations, which dispensed 3,000,000 pounds of free ice during the summer. The generosity of the large ice companies made this work possible.

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The plan for systematic after-care of discharged maternity cases has been developed and extended (over 1,000 cases were transferred from maternity hospitals to milk stations during the month of March, 1916).

Detailed information concerning the Hospital and District Maternity Service in the city and facilities for caring for destitute women before and after confinement has been tabulated and distributed in booklet form to all nurses and organizations doing prenatal work.

A clearing house for wet nurses has been established in cooperation with the Department of Health.

A Junior Auxiliary has been formed as a central organization for girls interested in helping "to save the babies." Any league, class or group of girls is eligible for membership and can send two representatives to all meetings.

Two baby improvement contests have been supervised and lectures arranged.

A prize essay contest has been run for the benefit of the Little Mothers' Leagues.

Health picture contest has been organized in cooperation with the Gramercy Neighborhood Association for Mothers and Little Mothers.

Fifty thousand pieces of educational literature have been distributed.

Milk station records, infant mortality figures and general information concerning the various phases of baby work have been compiled and published in form of weekly reports and mailed to over 600 organizations, doctors and social workers.

Statistics and data have been sent to 76 different cities.

MARY ARNOLD, *Executive Secretary.*

BUREAU OF MUNICIPAL RESEARCH

New York City

The Bureau of Municipal Research of New York City is organized for the purpose of promoting the application of scientific principles to government.

In the public health field the Bureau is concerned chiefly with making studies of national, state and municipal health administration with the view to offering constructive recommendations for increased economy and efficiency in such administration. Since the prevention of infant mortality is, we believe, one of the most important problems of health administration in this country at the present time, the Bureau endeavors to point out in its surveys of municipal government how health department service should be organized to carry on work for the prevention of infant mortality most effectively. The work of the Bureau is therefore almost purely educational.

CARL E. MCCOMBS, M. D., *Supervisor of Public Health Work.*

CAMP FIRE GIRLS

Headquarters, New York City

80,756 American girls are enrolled in the Camp Fire Girls.

List of Camp Fire Honors Relating to Infant Welfare:

I. Name the chief causes of infant mortality in summer. Tell how and to what extent it has been reduced in one community. In a city, there may be an opportunity to visit a milk station, to see the babies brought in and weighed and to see there what is being done by that particular city. The work of a number of cities has appeared in illustrated magazine articles, which may be found by an index to current periodicals. (Required Honor.)

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II. Know how milk should be prepared for a six-months-old baby; know what is good milk for a baby a year old and how it can be tested.

III. Know how much a baby should grow in weight each week for the first six months, in height for each month for the first year, the relation of weight to disease and vitality.

IV. Know and describe three kinds of baby cries and what they mean.

V. Care for a baby for an average of an hour a day for a month.

VI. Use a clinical thermometer to obtain the temperature of an adult and an infant, and tell the temperature, indicating normal, fever, and dangerous conditions.

LUTHER H. GULICK, *President.*

METROPOLITAN LIFE INSURANCE COMPANY

Headquarters, New York City

Maternity Work in the Visiting Nurse Service

Maternity service has continued to play an important part in the visiting nursing work of the Metropolitan Life Insurance Company. In 1915, out of a total of 148,933 cases of females visited, 35,533 or 23.9 per cent were concerned with the puerperal state. The vast majority of these cases, 31,560 were of women between the ages of 20 and 40. This number corresponds to a rate of 17.6 per thousand female policyholders at these childbearing ages; in 1914 the rate was only 15.8. The proportion of our women policyholders who avail themselves of this service is thus an increasing one and we are, therefore, distinctly interested in everything that bears on the care of the mother in childbirth and on the health of the baby.

Of the total number of puerperal cases, 27,626, or 77.7 per cent were normal; the rest were concerned with the accidents of pregnancy or the complications of childbirth. There were 33,926 cases (95 per cent of the total) which were attended by a physician. This group includes 26,467 cases which were actually nursed, 5,504 which were advised and 1,955 which were neither nursed nor advised.

In the entire service, each case received an average of 6.0 visits covering an average period of 8.4 days of nursing care. In the group "nursed with physician," which is the most important group, the average number of visits was greater, 7.7 per case, and the period in which these visits were made was correspondingly longer, 10.4 days per case . The number of visits and the number of nursing days varies, of course, with the type of case nursed. Where there are complications of any kind, the nurse is expected to give service precisely as she would in any other case of acute disease. It is not surprising therefore, to find that the average case of puerperal albuminuria and convulsions received 10.2 visits covering 16.2 days of care and the average case of puerperal septicemia 12.7 visits covering 15.6 days of nursing care. At a cost of little more than 51 cents per visit the average puerperal case cost about $3.08. The entire maternity service, comprising 213,938 visits, represented an expenditure, on the part of the Company of $109,750.19.

Until recently the work of the Company was limited to postnatal care. At the present time, attention is being paid to the expectant mother also. Thus in 1915 there were 5,695 cases of "pregnancy only" which had an average of 1.3 visits per case. In addition there were 1,147 cases of normal childbirth which received both prenatal and postnatal service. Of this number 1,027 were nursed, receiving an average of 8.5 visits per case, while 87 cases received an average of 2.8 visits of

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advice. The Company is considering at this time a more comprehensive plan of prenatal work whereby expectant mothers will be more adequately visited and instructed in the hygiene of pregnancy and the preparations for childbirth.

In 1915, 122 cases were terminated by death as against 95 in 1914. This number is too low; for unquestionably there were some cases which came to a fatal termination subsequent to discharge from the service and which did not, therefore, appear in the figures. The industrial mortality experience of the Company for the year 1915 shows that there were 1,733 deaths from the puerperal state in the age period 15-44. This is a death rate of 65.3 per hundred thousand female policyholders at these ages. In 1914 the number of deaths was 1,802 and the rate 71.2 per hundred thousand between the ages of 15 and 44 inclusive. This corresponds to a decrease of 8.8 per cent in the rate. Between the two years 1911 and 1915 the reduction was even greater, namely 10.4 per cent. These decreases are very striking and may be due in part to the extensive care given by the Visiting Nurse Service of the Company; for, as at present organized, this service not only gives bedside care but is responsible in many instances for the attendance of the physician and for other preparatory measures which insure the safety of the mother and the well-being of the child.

Metropolitan Life Insurance Company—Visiting Nurse Service. Analysis of Diseases and Conditions of the Puerperal State: Number of Cases, Per Cent of Total, Number of Visits, Average Visits per Case, and Average Nursing Days per Case by Color. 1915.

Color and sex; disease or condition	No. of cases	Per Cent of Total Female cases	No. of Visits	Average Visits per Case	Av. Nursing Days per Case
White and Colored Female					
Total puerperal state	35,533	23.9	213,938	6.0	8.4
Abortions and miscarriages	3,256	2.2	17,941	5.5	7.5
Other accidents of pregnancy	476	0.3	3,139	6.6	11.6
Pregnancy only	5,695	3.8	7,607	1.3	2.7
Pregnancy and after-care	1,147	0.8	9,029	7.9	27.7
After-care only	20,784	14.0	132,337	6.4	7.8
Puerperal septicemia	995	0.7	12,642	12.7	15.6
Puerperal albuminuria and convulsions	303	0.2	3,083	10.2	16.2
Other diseases and conditions of the puerperal state	2,877	1.9	28,160	9.8	13.5
White Female					
Total puerperal state	32,300	25.3	195,168	6.0	8.4
Abortions and miscarriages	2,886	2.3	16,101	5.6	7.5
Other accidents of pregnancy	436	0.3	2,934	6.7	11.8
Pregnancy only	5,199	4.1	6,939	1.3	2.7
Pregnancy and after-care	1,031	0.8	8,118	7.9	28.2
After-care only	18,894	14.8	120,525	6.4	7.8
Puerperal septicemia	894	0.7	11,363	12.7	15.4
Puerperal albuminuria and convulsions	280	0.2	2,855	10.2	15.1
Other diseases and conditions of the puerperal state	2,680	2.1	26,333	9.8	13.5
Colored Female					
Total puerperal state	3,233	15.4	18,770	5.8	8.5
Abortions and miscarriages	370	1.8	1,840	5.0	7.8
Other accidents of pregnancy	40	0.2	205	5.1	10.3
Pregnancy only	496	2.4	668	1.3	3.1
Pregnancy and after-care	116	0.6	911	7.9	22.8
After-care only	1,890	9.0	11,812	6.2	7.9
Puerperal septicemia	101	0.5	1,279	12.7	17.1
Puerperal albuminuria and convulsions	23	0.1	228	9.9	28.7
Other diseases and conditions of the puerperal state	197	0.9	1,827	9.3	13.3

LEE K. FRANKEL, *Sixth Vice President.*

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NATIONAL COMMITTEE FOR THE PREVENTION OF BLINDNESS

New York City

INFANT WELFARE WORK—SEPTEMBER, 1915, TO SEPTEMBER, 1916.

For the purpose of ascertaining the advance made in the various states looking towards the prevention of blindness among infants, this Committee made a study of the state laws and regulations which relate to the control of ophthalmia neonatorum passed since the report of 1915, with the following comparison resulting:

	1916	1915	Gain
1. The reporting of babies' sore eyes to the local health officer, or to a physician, compulsory in	37 states	30	7
2. The reporting law printed on the birth certificate in	7	5	2
3. Local health officers authorized and required to secure medical attention for uncared-for cases, or to warn parents of the dangers and advise immediate treatment in	21	11	10
4. Births reported early enough to be of assistance in prevention of blindness work in	11	4	7
5. The question as to whether or not precautions were taken against ophthalmia neonatorum included on the birth certificate in	14	9	5
6. Free prophylactic outfits distributed to physicians and midwives in	16	12	4
7. The use of a prophylactic (specified by the State Board of Health) as a routine, compulsory in....	15	6	9
and strongly recommended in an additional	5		5
8. Popular educational leaflets, relating in whole or in part to prevention of infantile blindness, distributed by State Departments of Health in.....	29	19	10

The Committee has prepared its annual table showing the proportion of newly admitted pupils blind from ophthalmia neonatorum, in the state schools for the blind in this country.

School Year	No. of Schools	Total new Admissions	Pupils blind from O. N.	Per Cent
1907-08.....	10	290	77	26.5
1908-09.....	14	300	68	22.6
1909-10.....	13	325	67	20.6
1910-11.....	15	351	84	23.9
1911-12.....	24	415	88	21.2
1912-13.....	21	386	88	22.7
1913-14.....	19	428	84	19.6
1914-15.....	28	602	91	15.1
1915-16.....	35	666	127	19.0

The annual decreased percentage of those blind from ophthalmia neonatorum is undoubtedly due to a more general understanding of the dangers from ophthalmia neonatorum, and the methods of prevention combined with constant betterments in state regulations. An apparent contradiction to this estimate as shown in the increased percentage of 1915-1916 over 1914-1915, is explained by the fact that the seven schools reporting for the first time represent six states, one of which has practically no legislation on the subject, while four of the others have made regulations too recently to affect children of the present school age.

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The Committee has taken an active part in Baby Week Campaigns and general child welfare work sending exhibits to 33 cities representing 19 states, and slides to 25 cities representing 16 states. Literature and suggestions for carrying out the work accompanied this material. In many cases lecturers were provided.

The Committee has also been well represented in the campaign of those states contemplating new or additional legislation. It has accomplished much in awakening the people of such states to a realization of the seriousness of the question from a financial and economic viewpoint as well as from the more important humanitarian consideration.

It has taken immediate action upon those cases of ophthalmia neonatorum brought to notice, and has been influential in saving many babies from lifelong blindness.

EDWARD M. VAN CLEVE, *Managing Director.*

NATIONAL LEAGUE OF NURSING EDUCATION

New York City

The work for the prevention of infant mortality is one of the most important branches of nursing activity. The nurse with her experience in the homes of the poorer classes can probably do more than any other one individual to instruct the mothers as to the dangers to themselves and to the babies, before and after birth. We recognize that the nurse herself must be properly instructed in this direction in order that she may be able to teach the mothers. The League is therefore urging that instruction in prenatal care, and in the care of healthy and sick babies be made a part of the regular curriculum in obstetrics in all the nurses' training schools. The League urges that each member of this Association use his or her influence to see that the nurses in the local hospitals receive the necessary training in this important branch.

NELLIE E. CASEY, R. N., *Delegate.*

NATIONAL ORGANIZATION FOR PUBLIC HEALTH NURSING

Headquarters, New York City

The organization at its annual meeting in New Orleans in April, 1916, had a section devoted to infant welfare.

A special committee of the organization is at present engaged in making a study of the nurses' records used in infant welfare work with a view to arranging a record that will meet the needs of all organizations.

MINNIE H. AHRENS, R. N., *Delegate.*

NEW YORK ASSOCIATION FOR IMPROVING THE CONDITION OF THE POOR

Nursing Bureau

New York City

I. Activities included in the work of the Association:
   Convalescent care and instruction at Caroline Rest
   Special intensive work with tuberculosis families
   Follow-up work of poliomyelitis cases
   Cooperation of Home Economy Department in instructing mothers

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Visiting cleaners who do the heavy work before and after our mothers are confined
Pensioning of widows whereby mothers are able to remain at home and care for their children
Country care, with adequate fresh air facilities.

II. Features developed with the greatest success:
Preventive and educational

III. Important advances in the work of the Association during the current year:

More intensive work on our prenatal cases
Intensive work among our tuberculosis families
Increased facilities for fresh-air outings
Increase in the number of nurses employed

IV. All work is done gratuitously. We do not have "mothers of moderate means."

V. Our work is financed by voluntary subscriptions, and is brought to the attention of the public through personal and letter appeals.

SUMMARY OF PRENATAL WORK FOR THE YEAR ENDING SEPTEMBER 30, 1916:

Sources from which cases come: Social agencies, hospitals and dispensaries, private individuals, personal application

Number of mothers registered during year ending September 30, 1916: 639

Average time under supervision: 6½ months. Patients are visited every two weeks; more often if necessary

Number delivered in hospitals: Average of 8 per cent

Number delivered in their own homes: Average of 92 per cent

Mothers are kept under observation after confinement long enough to be sent for convalescence to the "Caroline Rest" and to be placed under observation at a milk station.

BESSIE S. LE LACHEUR, R. N.,
Superintendent of Nursing Bureau.

THE NEW YORK DIET KITCHEN ASSOCIATION

New York City

I. Activities included in the work of the Association:

Prenatal work; postnatal work including baby conferences, home visiting and emergency care of sick babies; general educational work among mothers at the milk stations and in the homes; conferences with the mothers for children of pre-school age; and social service work in connection with all cases requiring it.

II. We find that preventive and educational work offer best opportunities for successful development.

III. Recent advances: The opening of two new cooking classes for mothers, in connection with the conferences for children of pre-school age have proved a most important step in strengthening the work of the Association.

IV. At present all of our work is done gratuitously, but there is a demand, which must eventually be met, for instructional work with mothers who can pay a small sum.

V. The work of the Association is called to the attention of the public by newspaper publicity, by definite appeals for support and by the distribution of the annual reports.

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Summary of Prenatal Work.

Cases come from milk station families; are referred by cooperating agencies, and a few from personal visits.

Number of mothers registered during the year ending September 30, 1916, 994

Average time under instruction, 4 months

Each expectant mother must be visited at least every two weeks; but as a rule, each is seen more frequently.

Number delivered in hospitals, 159; number delivered in their own homes, 495

Stillbirths, 9; deaths of babies during the first month, 9; deaths of mothers, 3; breast fed babies during first month, 90 per cent.

Summary of Post-Natal Work.

Infant welfare conferences, 25 weekly during the winter; 39 weekly during the summer. Average attendance, 734 weekly.

Total number of follow-up visits in the homes, 18,219

Maria L. Daniels, R. N., *Director.*

RIVERDALE NEIGHBORHOOD ASSOCIATION AND HEALTH LEAGUE

Bronx Borough, New York City

Organized in 1909. Its district covers two square miles. Being situated in the extreme northwest corner of New York City along the Hudson River, it affords both rural and urban opportunities. Population about 2,000, of which 332 are children under 16 years, and 143 under 5 years. Its aims are to promote public health and community interest in all its phases.

Its activities are varied. It maintains a neighborhood house, a library, public lectures, a social worker and district nurse the year round, also the service of a sanitary inspector part of the year. It has the valuable assistance of a physician who renders gratuitous services as medical and sanitary advisor, and a sub-committee of ladies to help the nurse and be ready to assist with prompt relief for the needy.

The Health League endeavors to provide a nurse who, through actual service with special lectures and study, is competent to do general visiting nursing—a family nurse who may become acquainted with the well people, in addition to the sick—an individual nurse who becomes a friend in any family she serves. The present nurse is at the fifth year of her activities in Riverdale, where comfortable quarters are provided at the Neighborhood House, centrally located, salary $1,000, with two weeks vacation yearly.

Though the Health League in its small district has not established a standard child welfare service, to date, the actual bedside care of the acutely ill has not prevented regular activities along those lines. The chief features of all social calls made were prenatal and follow-up care, infant feeding, child hygiene, clinic attendance and relief. A small fee is charged for all sick calls—some few families were served gratuitously—of these fees about one-third covered carfares, office supplies, etc. During the year the nurse made 1,025 sick calls on a total of 253 patients. These included medical, surgical, gynecological, maternity, tuberculosis, contagious, orthopedic, etc. The social calls number 1,607, of which 84 were office and 72 clinic visits. The district is constantly growing in population. The yearly records of this community prove the value of prenatal and child welfare work. During a period of five years, 68 births in all social classes occurred. Of these, 1 was attended by a midwife, all others

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had physicians. While some had private nurses, a majority had the district nurse with the assistance of a practical nurse or members of the family. A five year mortality record shows: mothers, 0; still births, 0; prematures, 4; these all in sanatoria or hospital died under one month. A five year mortality list on children under 16 years shows 6 of these, 2 pneumonia, 1 diphtheria, 1 erysipelas, 2 post-operative hydrocephalic. Aside from the small fees collected, the work is entirely supported by voluntary contribution.

ROSE A. SCHNEIDER, R. N., *Nurse in Charge.*

BABY WELFARE COMMITTEE

Utica, N. Y.

I. Activities included in the work of the Committee are: Prenatal care, postpartum instruction, medical clinics, feeding conferences, hospital care of sick babies (in cooperation with Faxton Hospital), sale of milk, home visiting by nurses to infants.

III. Most important advances in the work of the Committee during the current year: The addition of a fulltime prenatal nurse to the staff, the opening of a third permanent station with clinic, etc., and the securing of free beds in Faxton Hospital for the Committee's sick infants under the care of the medical director of the Committee, who is visiting pediatrist to the hospital.

V. All of our work is done gratuitously. Many patients of private physicians have the services of the nurse but do not see the station physicians. There is no charge for this work.

VI. The Committee this year receives $2,300 from the city. The rest is raised by private subscription and solicitation, and by the placing of quart milk bottles in prominent stores with an appeal card attached.

SUMMARY OF PRENATAL WORK FOR YEAR ENDING SEPTEMBER 30, 1916:

Cases come from baby welfare stations

Mothers registered during year ending September 30, 1916, 172

Our nurse attends the obstetric clinic of Utica Dispensary and cooperates with it; clinics are held twice a week.

Patients are visited every two weeks.

Number delivered in their own homes, 113

The Committe was organized in 1912, having one milk station with clinic and nurse for two months; in 1916 we had three permanent stations, one prenatal nurse and Little Mothers Leagues. There were nine times as many babies enrolled in 1916 as in 1912, and almost forty-five times as much milk dispensed. Prenatal enrollment for 1916 was 366, with 2,016 prenatal visits paid. The infant mortality rate of Utica dropped from 150 in 1909 to 123 in 1915.

T. WOOD CLARKE, M. D., *Medical Director.*

NORTH CAROLINA

STATE BOARD OF HEALTH

Raleigh

The State Board of Health is interested in three distinct lines of infant hygiene work being carried on in this state.

I. We have been successful in securing the cooperation of the Federal Children's Bureau in having a survey of infant hygiene conditions *under rural conditions* made, or being made in one or two North Carolina counties, and on this survey it is our understanding that the Federal Children's Bureau shall work

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out a unit of practical infant hygiene work that can be carried out through the cooperation of the county and state forces. This unit of work, like our general plan of country unit health work, will be paid for eighty per cent by the county and twenty per cent by the state, or perhaps in the beginning sixty or fifty per cent by the county and forty or fifty per cent by the state. In other words, it is the object of this particular piece of work to find ways and means within the financial reach of counties for the counties to deal with infant hygiene work according to a well worked out plan largely on a county appropriation, but through agents employed and directed by the state.

II. The State Board of Health has carried on its usual educational activity directed against the prevalence of the common diseases of infancy and childhood.

III. The State Board of Health and the State University have cooperated in a unique and economical form of post-graduate medical education and have given courses in pediatrics to 150 of the 1,800 physicians in North Carolina during the past summer. This course has been carried out as follows: We have two classes of about 75 men each. Each class is divided into six sections of about 12 to 15 men each. These sections meet in six different towns which serve as convenient meeting places for the sections. The professor of pediatrics meets each section three hours a week. The first hour is devoted to a lecture, and the next two hours to clinics. One class will have had when the course is completed sixteen meetings, that is, sixteen lectures and thirty-two hours of clinics; the other class will have had thirteen meetings, that is thirteen lectures and twenty-six hours of clinics. The professor meets one section a day, that is, one every one of the six days of the week, or he meets the six sections on five days in the week, meeting two sections on one day, one in the morning and one in the afternoon.

The whole proposition is this, to take the professor to the men in the trenches, moving one man instead of moving 150 or 75 physicians to New York or Philadelphia, or somewhere else, to take a post-graduate course in diseases of children. We go and get the professor and give him a train and an automobile, and his classes meet on the six days of the week in six different places convenient for him to reach. The men in the classes pay $30 a piece for the course, and we pay the professor $500 a month. His expenses are not over $100 a month, so he clears $400 a month net salary. For these men to go off and take a six weeks course in pediatrics would cost them not less than $400, that is including expenses and loss of income during their absence from their field of practice. Under our scheme, they get a better course and get it for $30, less then one-tenth the cost of the regular post-graduate course. The two men we are using in this work this year are, a man who is an officer in the Harvard Medical School and another man who is an officer in the Northwestern University, Dr. Lewis Webb Hill, and Dr. Jesse Robert Gerstley respectively. Of course, our post graduate scheme is intended to give any branch of medicine in which the general practitioners have a common interest, but in its beginning we have taken up courses in pediatrics. The men taking the course are very much interested. They come to their classes, and we have had very little trouble securing clinical material.

W. S. Rankin, M. D., *Secretary, State Board of Health.*

OHIO

INFANT WELFARE CIRCLE OF THE JEWISH SOCIAL SERVICE BUREAU

Cincinnati

I. and II. Activities included in the work of the Circle: Registration of all births as recorded at the Board of Health. Friendly visits for the purpose of

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informing the mother of the privileges of the Milk Station. Complete record kept of babies attending milk station, as to the number, kind of feeding, etc.

III. Most important advances during the current year: A better appreciation of statistical records and of their vital connection, with field work.

V. Our work is done in connection with the United Jewish Charities, no financial support may be solicited.

MRS. DORA W. PRITZ, *Chairman.*

THE BABIES' DISPENSARY AND HOSPITAL

THE BUREAU OF CHILD HYGIENE, DIVISION OF HEALTH

Cleveland

I. The following activities are carried on under the joint direction of the Babies' Dispensary and Hospital, and the Bureau of Child Hygiene of the Division of Health:

Postnatal Care: Central dispensary for sick babies, 15 prophylactic dispensaries for well babies, home instruction in the care of sick and well babies.

Feeding Conferences: Clinic three days a week at each of the prophylactic dispensaries.

Prevention of Blindness: Two nurses to care for eyes of babies and children under three years; one nurse to care for eyes of children over three years and adults.

Hospital care for sick babies: Out-door ward for sick babies open three months during summer.

Follow-up home visiting by Bureau of Child Hygiene nurses.

Lectures and clinical experience to Western Reserve University medical students.

Post graduate course to nurses.

Junior Mothers' courses for girls from 10 to 16 years of age.

Staff is part of faculty of the new school of Applied Social Sciences of Western Reserve University.

Bureau of Health Education has been established in connection with the Division of Health. Articles on the care of the baby by the Commissioner of Health are published in the daily and Sunday papers.

II. It is easiest to develop work for sick babies.

Preventive work is slow in developing, but most valuable and worth while.

Educational work of interest to all groups of people: very satisfactory with intelligent people, very discouraging with indifferent groups of people.

Remedial activities: Care and cure of ill babies.

Preventive and Educational: Instruction to individual mothers, to groups of people, lectures and classes.

III. Most important advances during the year:

Special research work in connection with the milk laboratory at the Babies' Dispensary and Hospital.

Junior Mothers' Corps and general publicity educating the public.

Organization of Bureau of Health Education in connection with Division of Health.

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IV. In May, 1915 a fee system was inaugurated at the Babies' Dispensary. The fees are graduated in the same way as was done previously in the matter of charge for milk, as per schedule attached.

V. Most of the funds for the Babies' Dispensary are received through the Cleveland Federation for Charity and Philanthropy, newspaper publicity, written appeals, and this last year through a moving picture campaign.

The Bureau of Child Hygiene is financed by public funds.

NATIONALITIES: OCTOBER 1, 1915 TO OCTOBER 1, 1916

401 of the total number of 2,227 new patients admitted from October 1st, 1915, to October 1st, 1916, are Jewish of the following different nationalities: American, Armenian, Austrian, Bohemian, Canadian, English, Galician, German, Hungarian, Lithuanian, Polish, Roumanian, Russian.

380 of the total number of 2227 new patients admitted are American; 139 are colored; 116 are German; 181 are Hungarian; 283 are Italian; 199 are Polish; 160 are Slavic.

368 are patients of the following nationalities: Armenian, Austrian, Bohemian, Bulgarian, Canadian, Croatian, Danish, Dutch, English, Finn, French, Greek, Griner, Gypsy, Irish, Lithuanian, Manx, Norwegian, Roumanian, Routanian, Russian, Scotch, Servian, South American, Swedish, Swiss, Syrian, Welsh, West Indian, 10 unknown.

The nationalities given above are taken from Central Dispensary, but the per cent is about the same at the Prophylactic Dispensaries.

SUMMARY OF POST-NATAL WORK

Clinic three days a week at each of the Prophylactic Dispensaries.
90,311 follow-up visits for instruction of mothers and care of sick babies.

R. H. BISHOP, JR., M. D., *Commissioner of Health,*
HARRIET L. LEETE, R. N., *Superintendent of the Babies' Dispensary and Hospital and Superintendent of Nurses, Bureau of Child Hygiene.*

THE VISITING NURSE ASSOCIATION OF CLEVELAND

Cleveland

I. Activities included in the work of the Association: Prenatal visits are made to as many waiting maternity cases as we carry, and detailed instruction is given to each mother. We care for all obstetrical cases reported to us, other than those eligible for free maternity dispensary care, nursing the mother at time of delivery and giving post-natal care as long as necessary.

The feeding cases and prevention of blindness cases are referred to the Babies Dispensary Hospital. Care for sick babies is provided when necessary.

We do no rural nursing other than in the outlying districts of our city.

II. We find that preventive and educational instructions are most acceptable when accompanying bedside nursing. We try to teach constantly the simple laws of hygiene and sanitation. We also try to make a point of instruction regarding food.

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III. The most important advance during the current year: The realization of our obligation to Cleveland citizens as a whole, in providing bedside nursing to the infant, adolescent and adult. This realization is complete inasmuch as it has taken active form.

IV. We have made a particular effort during the past year to care for mothers and babies of moderate means, and have been able to collect fees for instructive visits, either prenatal or postnatal, as well as for the bedside nursing. This has been a very acceptable service to many, and we feel the future has great possibilities.

V. Our work is financed largely through voluntary subscription. A very small precentage is self supporting. Our work is constantly placed before the public through conservative publicity, by use of the newspapers, Federation Journal, and by occasional public meetings.

Prenatal Work: Cases referred by charitable organizations, neighbors, friends, doctors and families

The total number of prenatal visits during the year was 770

Patients are visited on the average of once a month. More often if necessary.

Postnatal Work: The total number of children under five years of age, cared for by the Association, was 1,461.

The staff during the year ending September 30, 1915, averaged from 34 to 36. During the year ending September 30, 1916, it averaged from 36 to 40.

BLANCHE SWAINHARDT, R. N., *Superintendent.*

PENNSYLVANIA

THE BABIES' HOSPITAL

Philadelphia

Activities included in the work of the hospital: Hospital care for sick babies, clinic for sick babies, also prophylactic clinic, feeding conferences, prenatal and postnatal care, home visiting and social service in all cases.

Our work is done gratuitously, but if a mother is able to pay, we urge her to "Contribute."

SUMMARY OF PRENATAL WORK FOR YEAR ENDING SEPTEMBER 30, 1916.

Sources from which cases come: Babies Dispensary, Barton Dispensary, friends of cases being carried.

Number of mothers registered during year ending September 30, 1916, 140

Obstetrical clinics are held one day a week. Patients receive about 25 visits each.

Average time under supervision, 6 months

Number delivered in hospitals, 20; Number delivered in their own homes, 116

We had only one premature labor after 6 months, mother being tuberculous.

One hundred and twenty-six babies were breast fed one month after birth

One hundred and thirty-six babies (entire number born) were living one month after birth

We had one maternal death two weeks after confinement, of malignant endocarditis; one maternal death from a fall two weeks before confinement, causing hemorrhage.

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SUMMARY OF POST-NATAL WORK FOR YEAR ENDING SEPTEMBER 30, 1916:

Two feeding conferences are held each week for well babies up to three years old. Visits are made to homes once or twice a month, and instruction given the mothers in caring for the babies. Small babies are brought to clinic every two weeks, older ones once a month. Babies are weighed and temperature taken.

Total number of children cared for during year ending,

September 30, 1915	September 30, 1916
Hosp. 122	Hosp. 108
Disp. 543	Disp. 700

Total number of children under 12 months old cared for during year ending,

September 30, 1915	September 30, 1916
Hosp. 85	Hosp. 76
Disp. 451	Disp. 526

Total deaths of babies under 12 months old under our care during year ending,

September 30, 1915	September 30, 1916
Hosp. 27	Hosp. 21
Disp. 12	Disp. 10

Budget, 1915, $20,122.65. 1916,$37,036.88.

THEODORE LE BOUTILLIER, M. D., *Medical Director of Hospital,*
JOHN F. SINCLAIR, M. D., *Medical Director of Dispensary,*
RENA P. FOX, R. N., *Supervising Nurse.*

THE BABIES' WELFARE ASSOCIATION

Philadelphia

The Babies' Welfare Association was organized in March, 1914, to make possible more definite cooperation among and to increase the efficiency of the work followed by individual baby saving agencies and institutions in Philadelphia, and to encourage a closer relationship and cooperation between the several city departments directly and indirectly interested in child hygiene and all baby saving agencies and institutions.

The work of the Association is carried out chiefly through its sub-committees. Some of the most important work accomplished during the past year by the various sub-committees is as follows:

The Committee on Division of Child Hygiene prepared a tentative outline of rules and regulations for the conduct of Baby Farms and Boarding Homes for Infants in Philadelphia, and for Lying-in Hospitals and Private Maternities, which rules and regulations have been adopted by the Department of Public Health and Charities.

The Committee on Municipal and Visiting Nurses has recommended that a Central Registration Bureau be established in City Hall for the registration of all cases by the hospitals and dispensaries doing baby and prenatal work to prevent duplication of work and also to see that all cases leaving the hospitals received the necessary attention.

Through the efforts of this Committee the Pennsylvania State Board of Examiners for Registration of Nurses has included in the curriculum recently presented to the training schools in this state, a recommendation that social service work be given nurses while in training.

The Committee on Hospitals is securing the cooperation of the Social Service and Visiting Nurse Departments of the various hospitals in following up the patients discharged from the Diphtheria Pavillion of the Philadelphia Hospital for Contagious Diseases, in order, for instance, to prevent the development of cardiac sequelae in convalescent children.

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This Committee is so impressed with the value to hospitals and to the medical profession of Social Service and of "Follow-up" work, that it has requested the State Board of Medical Licensure to require of all applicants for license to practice medicine in the State of Pennsylvania, that they shall have devoted a certain authorized period of time to the subject of Social Service in hospitals, before being eligible for examination.

The Committee on prenatal work has given publicity throughout the medical profession to the fact that physicians can secure the services of nurses for prenatal care for their patients through the Visiting Nurse Society and the Municipal Nurses of the Division of Child Hygiene.

This Committee has been making every effort to have introduced into the obstetrical course of each Medical College definite instruction both didactic and practical regarding prenatal care.

Efforts are being made also to secure the adoption of a uniform history blank by all agencies doing prenatal care work.

In November, 1915, when the Chief of the Division of Child Hygiene, Bureau of Health, was appointed by Councils, the following activities of the Babies' Welfare Association were transferred and are now under his direct supervision.

Information Bureau, relating to infants under two years
Wet Nursing Registration Bureau
Weekly Vital Statistical Bulletins, relating to children under two years.
Night and day emergency calls, telephone service.
Hospital Information Bureau, vacant beds for children.

HOWARD CHILDS CARPENTER, M. D., *Chairman Executive Committee.*

THE CHILD FEDERATION

Philadelphia

The Child Federation previous to 1913 was known as the Child Hygiene Committee, under whose auspices was given the very successful Baby-Saving Show, at Horticultural Hall, Philadelphia, with an attendance of 67,507 persons. On September 30, 1913, the Committee was reorganized and its name changed to The Child Federation. It was chartered and incorporateed under the laws of the Commonwealth of Pennsylvania. Its purpose is to actively advance by original and constructive methods, the best interests of babies and children in Philadelphia.

After three years of work The Federation has by a process of evolution become an agency somewhat different in its scope than that planned by its incorporators. Today the Federation is an advisory bureau regarding matters of public health for the individual, the privately supported agency and the city departments. It is:

A reference bureau for the student, for the practicing physician and for the public health official.
An organizing bureau for campaigns of health, publicity and education.
An agency which is demonstrating the value through research and experimentation of ideas applicable for the increasing of the efficiency of bureaus of health throughout the country.
A group of Philadelphia citizens who stand ready to combat any evil conditions affecting the lives of the city's children.

All work is planned and carried out by its members. There are no dues for initiation or membership, the only requirement being ability and willingness to give personal service in the interests of babies and children. Paid workers are

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used only when absolutely necessary. The only salaried official is a managing director, whose salary is underwritten. The actual work is entirely dependent on voluntary contributions.

ORGANIZATION: The Federation has amplified its organization by the introduction of ward representatives. In each ward throughout the city is an official representative of the Federation. This representative acts in a double capacity:

1st—As a recipient of complaints from residents in the ward regarding the welfare of the children in the ward.

2nd—As an organizer for special work in the ward to be carried on under the direction of the Federation.

THE HEALTH CENTER: Probably the most significant and important of the Federation's activities has been the Health Center. Established three years ago for intensive educational health work as a demonstration of the value of the idea with the ultimate aim that Philadelphia should reorganize its health department by districting the city into health districts each with its health center building. Health District No. 1 jointly supervised and maintained by the Bureau of Health and The Federation is the result of this work as well as the establishment of four other health districts, modelled on Health District No. 1.

INSTRUCTION FOR SCHOOL GIRLS REGARDING CARE OF BABIES: As a result of continued Federation activities in demonstrating in the actual conduct of classes and work in creating public sentiment for such instruction followed by close personal work with school boards, etc., such instruction is now being given to nine thousand Seventh and Eighth Grade girls as a regular part of their elementary school work.

VOLUNTEER CLASSES: The Federation conducts on an average of about 43 volunteer classes for girls besides regular school work. Fifty-three such classes in school-yard play grounds conducted by the Federation last summer with the help of municipal nurses with the result that all women applying for positions as teachers in Philadelphia school-yard play grounds must be familiar with subject and able to teach The Care of Babies and Hygiene of the Home.

THE FEDERATION BABY SAVING SHOW has been presented to the City of Philadelphia. Philadelphia, therefore, to the best of our knowledge, being the first large city to own and conduct a permanent Baby Saving Show. During the last two years 710,782 people have visited this exhibition, as it has been conducted in different neighborhoods in Philadelphia by the Federation.

THE FEDERATION HEALTH BULLETIN SERVICE: Personal medical and public health advice printed in two languages posted in courts and alleys where people congregate, thus bringing health information to the people. We hope to prove the value of this method of health information to be so much greater than the accepted method of public health monthly and weekly bulletins and newspaper items that health departments will adopt the idea. The first department to do this, we expect, of course, to be Philadelphia.

JUNIOR SANITARY LEAGUES now being conducted throughout Philadelphia besides a splendid cooperative plan which has been worked out with the Boy Scouts whereby Boy Scouts become units of the Sanitary League.

Merit badges, prizes, etc., given by the Federation. Publicity work in connection with the Federation layette is still being carried on. The Federation office has organized the State office for the Commission for Relief in Belgium and is conducting that work for the state. The Federation has made possible and assisted in the organization of The Pennsylvania State Labor Bureau in Philadelphia. It has just finished a complete study of all day nurseries in Philadelphia resulting in a 100-page Day Nursery Hand Book giving accounting systems, accounting forms, case record blanks, prepared diet lists, etc.

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The Federation has recently issued a series of eight Baby Saving Charts. These charts are printed on heavy card board ready for hanging. They are particularly adapted for Day Nurseries, Baby Dispensaries, etc., and can be purchased from the Federation at cost.

An interesting essay contest for elementary school girls regarding The Care of Babies for which cash prizes were given. Conditions and results of contest were carried in specially blocked space on front page of city newspapers.

PHILADELPHIA'S FIRST BABY WEEK CAMPAIGN: Suggested to the Bureau of Health by The Federation, officered by The Federation at request of Department of Public Health. All office work, accounting, etc., carried on by Federation employees and volunteers under Federation direction.

CITIZEN'S COMPLAINT BUREAU: A widely advertised complaint bureau established in Federation offices. Complaints received concerning any condition affecting the welfare of the city's children. Such complaints immediately referred to proper agencies where these complaints are made "specials" and put through immediately. Splendid cooperation from public and private agencies.

SPECIAL SUMMER SANITARY WORK: The Federation acting as complaint bureau for the Division of Sanitation regarding stables and manure pits. The Federation furnished extra help in the Division of Sanitation office.

ANTI-FLY CAMPAIGN: Cooperation with department store and municipal nurses. Fly screening given to poor families who have been recommended by municipal nurses. Thousands of yards given away.

BABY WEEK STAMPS: The Federation has inaugurated a plan for the annual distribution of baby stamps during baby week. The proceeds to be held as a summer work fund for Philadelphia's babies. Stamps sold throughout the State of Pennsylvania.

Business and general "work surveys" of private institutions being carried on.

New reference library established. Collection of bulletins, pamphlets, monographs, etc., for the use of students, public health officers and medical men.

A new appropriation of $25,000 for municipal Division of Child Hygiene obtained largely through three months' active educational work among clubs, newspapers, institutions and individuals by the Federation.

Besides the above high spots it is, of course, impossible to mention the things accomplished in connection with other organizations both publicly and privately supported, regarding which it would be entirely improper for the Federation to give publicity. The Federation is doing the work it set out to do; that is, to become, through its members, such an influential organization that its field of helpfulness would be restricted only by the needs of the city.

ALBERT CROSS, *Managing Director.*

CHILDREN'S WELFARE COMMITTEE OF THE CIVIC CLUB

Philadelphia

I. Activities in the work of the Committee: Centers for boys on probation, with supervised gymnastics, games, etc. Boy Scout Troops. Centers for girls, sewing, housekeeping, marketing, cooking. Center for younger children, supervised games, story telling, elementary sewing.

II. Our work started as remedial—the classes for boys on probation, but we are trying, with equal success, our preventive work with the two other classes.

III. Our most important advance during the current year was the housekeeping center and work with the homes of the girls with consequent work with babies, prenatal teaching.

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V. All this work is done among the very poorest of our immigrants and no charge has ever been made. We furnish the teachers and, in summer, a nurse, and when supplies and clothing are needed, direct our families how to apply for same to the C. O. S. and church societies.

WHAT WE HAVE BEEN DOING:

Teaching foreigners English, thus preparing them for their duties as American citizens. Training the children, giving the girls from ten to fourteen years lessons in home making, cooking and sewing. Mothers' class: Teaching the mothers the care of the child. Visiting nurse: Caring for the sick babies of the very poor during the summer months. A Girls' Club: Meeting on Friday evenings. A class for Polish girls with a Polish teacher. The lunch room, opened in July, 1916, is our new work.

MRS. H. NORRIS HARRISON, *Chairman, Committee on Childrens' Welfare.*

STARR CENTRE ASSOCIATION

Philadelphia

I. The baby saving work of our Association includes both prenatal and postnatal care. The prenatal work is in charge of graduate nurse, who devotes practically all her time to it. She visits the expectant mothers in their homes and confers with them at the Starr Centre dispensary. Each mother is seen at least every two weeks and a blood pressure reading is taken and recorded, and a specimen of urine secured and examined.

An obstetric clinic is held once each week in charge of a competent physician. Mothers receiving prenatal care are given a thorough physical examination. A pelvic examination is made as frequently as deemed necessary and measurements recorded.

All cases receiving prenatal care are referred for obstetric care to a private physician, a maternity hospital or a dispensary physician. Our prenatal nurse keeps the proper person informed of all information obtained in the course of our care of each case.

A postnatal dispensary is held daily and a persistent effort made to keep all babies under continuous observation and care until the end of the second year of life. Careful records and weight charts are kept of all babies. An instruction class is held daily at the disepnsary where mothers are carefully taught the proper way to bathe and dress the baby and so forth.

Breast feeding underlies all our teaching, and that we are successful in educating the mothers, the following figures will show:

BABIES LESS THAN 1 YEAR OF AGE CLASSIFIED ACCORDING TO METHOD OF FEEDING:

	Oct. 1, 1914–Oct. 1, 1915	Oct. 1, 1915–Oct. 1, 1916
Total Babies Classified..... (This was total number under care)	677	547
Percentage Breast Fed.....	65.4	74.5
Percentage Partly Breast Fed.....	13.1	9.1
Percentage Bottle Fed.....	21.4	16.2

All babies not being breast-fed are placed on appropriate formulae, and the postnatal nurses teach the mothers the process of home modification in all its details. The formula in each case is changed as frequently as the condition of the child demands.

Cooperation between hospitals, dispensaries and other agencies is carefully observed and each case is referred, when necessary, to the place best suited to its need.

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A milk station is maintained where a special milk is sold at cost, but only on our physician's order and to our own patients.

During the present year, 1916-17, a complete physical examination will be made of all children on our records over 2 years of age, and an attempt will be made to correct any defects found.

It is also planned to maintain a sewing class for expectant mothers. This will hold weekly sessions at which instruction will be given in sewing, patterns supplied, and materials sold at wholesale cost. It is planned to give a short talk on some phase of the care of mother and baby at each meeting of this class.

We believe that the preventive and educational side of our work has given the best results. In this we include our prenatal work and our postnatal care of the baby, with special reference to teaching the mother the proper care, etc.

During the past year, of 62 babies born of mothers receiving prenatal care, all except one are entirely breast fed. This baby has a mentally defective mother, but even in this case the baby was breast fed until six months old. The above 62 babies are all that were born and lived.

We also consider that the low mortality of children less than 2 years of age, under our care during the past two years, has been due to our educational and preventive work. The mortality in 1914-15 was 4.13 per cent and in 1915-16 was 4.47 per cent.

III. We regard the perfecting of our prenatal care work and the further success in educating our mothers to nurse their babies, as the most important advances of the current year.

IV. We make no charge for prenatal care, as it is difficult to convince the mothers that such care is needed. We make no charge for care given to babies under two years of age, but we have a nominal dispensary fee of five cents for patients over two years old. We also charge a fee for vaccinations and patients, if able, pay for all medicines.

V. Our work is brought to the attention of the public by means of a circular letter, accompanied by our annual report, booklets, folders, etc.

Summary of Prenatal Work:

Weekly clinic is held. Total number of cases registered during the year, 159. Of this number, 24 were carried over from the previous year, and the rest were new cases. Average time under supervision, 70 cases carried to confinement averaged 128.9 days care each, or 4.23 months.

Each patient is visited from two to four times a month. A blood pressure and a urinary analysis is recorded for each visit. Number delivered in hospitals, 4 at full time. Number delivered in their own homes, 60 at full time; 3 abortions; 3 premature births; total, 66.

Effect of prenatal work: One stillbirth in 64 full time births; one infant death during first month of life, out of 63 born alive at full time; no maternal deaths.

Summary of Postnatal Work

Six conferences weekly. Average attendance, 29.61. This includes some patients over two years of age. Cases under care, October 1, 1915, to October 1, 1916—

Under two years old	715
Two to twelve years old	447
Over twelve years old	189
	1,351

Total number of follow-up visits to the homes for instruction and care of sick babies, 5,493.

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Respiratory diseases—		Infectious diseases—	
Broncho-pneumonia	9	Scarlet fever	3
Acute bronchitis	515	Measles	7
Pneumonia	13	Whooping cough	3
	537		13
Digestive diseases	487		

ALBERT L. JONES, *General Secretary,*
WILLIAM N. BRADLEY, M. D., *Medical Director.*

THE VISITING NURSE ASSOCIATION

Wilkes Barre

I. and II. Activities included in the work of the Association: Prenatal visits to patients, obstetrical care, postnatal care, baby welfare work. The nurses make prenatal calls to patients, but we have no organized prenatal department. Other instructive work which has proven of great value is in our baby welfare department.

III. The most important advance in the work of our Association during the past year was the rapid growth of the baby welfare work.

IV. The work is not done altogether gratuitously; each patient is supposed to pay according to her means.

V. The work of the Association is financed by voluntary subscription, fees from patients who are able to pay from 5 cents to 50 cents a visit, fees from the Metropolitan Life Insurance Company, and this year a fund was obtained by the sale of tickets to the different theatres of the city, the managers donating all tickets sold by the various teams of workers.

MARGARET R. BURNS, R. N., *Supervising Nurse.*

VISITING NURSE ASSOCIATION

York

I. Activities included in the work of our Association are: Prenatal care, postnatal care, prevention of blindness and hospital care for sick babies.

II. Our greatest success is in our preventive and educational work, including baby welfare work and prenatal care. Remedial measures consist in the extension of our work.

III. The most important advances in our work during the current year have been the systematizing of records; development of follow-up work with the babies; and connections established with manufacturing concerns.

V. We have established the fee system for actual nursing visits, but find it difficult to collect money in some of the homes, as part of our budget comes from contributions collected on Red Letter Day, when a house-to-house canvass is made and every community member gives as he or she is disposed. Many of the contributors feel that by giving in this way, annually, they are entitled to the services of the nurse free of charge.

VI. Our appeals are brought to the attention of the public through the press.

ELIZABETH KOB, R. N., *Superintendent.*

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RHODE ISLAND

BABY WELFARE ASSOCIATION

Providence

The work of this Association is carried on throughout the year. During the year 1916, 828 babies were cared for by the Association, as well as 828 mothers, these being chiefly American, Irish, Italian, Polish and Jewish.

In 1916 there were eight doctors and eight nurses on our staff.

For the year ending December 30, 1910, the death rate for the city was 145, while in 1914 it was reduced to 115.

The age limit of babies under the care of the Association is two years. All the work is done through the city Health Department, and the Association has no direct relations with any hospital for babies, nor does it carry on any special organized work for the prevention of blindness. The Association has at its disposal, for the care of homeless babies, one infant asylum and several baby boarding houses. When the babies have reached the two year age limit, they are turned over to the District Nurse Association.

The City Health Department is represented on the infant welfare committee of this Association.

Our work is limited to well babies or to babies suffering with intestinal diseases. The mothers and the babies are the only members of the families that are reached, as no effort is made to interest or instruct the fathers.

Volunteer workers are used to give assistance at the consultations under the nurse in charge.

The duties of the Board of Managers are to supply the needed funds and to institute new consultations. Part of the funds are raised by the Rhode Island Congress of Mothers.

HENRY E. UTTER, M. D., *Secretary.*

DISTRICT NURSING ASSOCIATION

Providence

I. The Providence District Nursing Association through its general visiting nurse service gives nursing care to medical, surgical and postnatal cases. Instruction and advice to patients suffering with tuberculosis through its staff of special tuberculosis nurses. A staff of ten children's nurses give advisory care and instruction to mothers in the care and feeding of their infants and young children; they are in attendance at the Well Baby Consultations and at the clinics for sick babies. They are also in attendance at the pure milk stations and have been in charge of the Floating Hospital this past summer. Prenatal care is also given. The nurses are ever on the watch for eye trouble. Providence has adequate hospital care for sick babies.

II. It is much more easy to successfully develop remedial nursing work than prevention and educational. Remedial nursing such as a patient bathed, a bed and room made clean appeals to everyone and shows results after the first or second visit; while the advice given to the mother of a well baby about its care and feeding, or the advice given to the tubercular patient as to how he must care for himself and the precautions he must take to prevent the spread of the disease does not appeal to a number of people as a necessity. This is demonstrated to this Association frequently, as we do both the remedial and the preventive work.

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III. Important advance in the work of the Association during the current year: The addition of two more children's nurses; the placing of our nurses in charge of the Providence Floating Hospital and the pure milk stations.

IV. Persons able to pay for the services of the nurse are expected to do so. Any amount from 5 to 50 cents being paid. In February, 1916, the Association started an hourly nursing service at the rate of 75 cents for the first hour or part thereof and 50 cents for the second hour or part thereof. $5.00 for attendance at operations or deliveries.

V. Each year in October, the Association has a donation or tag day. Publicity is started three or four weeks before that. Twelve or fifteen hundred people assist in making the day a success. We average each year about $10,000. At intervals during the year, brief reports of the Association's work appear in the daily papers.

MARY S. GARDNER, R. N., *Superintendent.*

WISCONSIN

BELOIT VISITING NURSE ASSOCIATION

Beloit

I. The activities of the Association include:
Feeding conferences in the summer
Instruction of the mother in the home
Obstetrical care
Postnatal care and keeping in touch with the babies

When a new-born baby is reported at the Health Department, the home is visited by a nurse from the Association, and the pamphlet on the Care of the Baby is taken into each home.

For three years the Association did infant work with its general nursing work.

II. Emphasis is laid more especially on remedial work, such as caring for sick babies and preparing feeding formulae.

The preventive work takes the form of friendly visits, distribution to the mothers, of pamphlets on the care of children, and urging the mothers to come to the conferences.

III. Some of the most important advances in the work during the year were: the making of a survey of the city for all babies under 2 years of age, and the recording of all children between the ages of 2 and 6; the starting of a health center in a small way; the furnishing of ice to needy families where the nurses of the Association were already supervising the feeding of the baby; and the employment of a second nurses.

IV. The charge for our visits is made on a sliding scale of from 10 cents to 50 cents per visit, and this plan has been very successful.

V. The salary of the head nurse is paid by the city; the staff nurse is paid by the Visiting Nurse Association, the money for this purpose being raised by membership fees, private donations, service money and the sale of Red Cross seals.

Postnatal work: One infant welfare conference each week. Average attendance, 7. Follow-up visits, 309.

ANNA LUETSCHER, R. N., *Supervising Nurse.*

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CHILD WELFARE DIVISION, HEALTH DEPARTMENT

Milwaukee

I. Activities included in the work of the Division: Care of sick babies in their homes; obstetrical care; supervision of midwives; supervision of lying-in hospitals, maternity homes and so-called baby farms; supervision of day nurseries; vaccination; prevention of blindness among infants; supervision of illegitimate babies; prenatal care; illustrated educational lectures; visits of instruction in the home; classes for mothers three times a week; Little Mothers' classes in the public schools; feeding conferences.

II. Preventive work: Prenatal care, postnatal care, prevention of blindness, child welfare stations, fresh air camps. Educational work: Visits to homes, Big Mothers' classes, Little Mothers' classes, illustrated lectures, exhibits.

III. The most important advances during the current year were the opening of additional child welfare stations, increasing the number of illustrated lectures throughout the city, opening additional fresh air camps during the summer months and an increased number of exhibits.

V. All our work is done gratuitously.

Summary of Prenatal Work for Year Ending September 30, 1916

Our cases come by canvass and through child welfare stations
Number of mothers registered during the year ending September 30, 1916, 110
Average time under supervision, 4 months
Obstetrical clinics are held twice weekly
Patients are visited once a week
Number delivered in hospitals, 46
Number delivered in their own homes, 64
Average cost of caring for each patient, $1.75 a day
Number of stillbirths reduced from 316 in 1915 to 268 in 1916
Breast feeding has been considerably increased in 1916 attributable to the fact of encouragement given to the mothers by lectures and otherwise in favor of breast feeding
The Department had 110 cases under observation in 1916 and lost but one case
Maternal mortality in the year 1914, 47 cases; maternal mortality in the year 1915, 34 cases

Summary of Postnatal Work for the Year Ending September 30, 1916

One hundred and fifty feeding conferences, three being held each week with an average attendance of fifty
Visits to home to instruct mothers and see that advice of Welfare Conference physician is carried out, 48,463
Home visits for care of sick babies during year ending September 30, 1916, 18,463

E. T. Lobedan, M. D., *Chief.*

INFANTS' HOSPITAL

Milwaukee

I. Established 1882. Activities included in the work of the hospital: Hospital care for babies, feeding conferences for mothers, weekly clinics for medical students and a training school for nursery maids.

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II. Our work is chiefly preventive and educational.

III. The most important advance during the year was the building of our new hospital; this building accommodates fifty infants. We take mainly cases of intestinal diseases; most of the babies are under two years of age. Our new building is completely equipped and the service is well established in both the house and the dispensary. During the past two years we have taken nurses from the City Welfare Department, for three months each, for post-graduate work.

IV. The hospital is a semi-charitable institution. It is free to those who cannot afford to pay anything. Mothers of moderate means who are willing and able to pay for hospital service, may do so.

V. The work is financed by voluntary subscriptions, five endowed beds and a few pay patients. The annual charity ball is given for the benefit of this hospital.

We have one social nurse who visits the infants at their homes and takes care of them.

NAN DINNEEN, R. N., *Superintendent.*

MATERNITY HOSPITAL AND FREE DISPENSARY

Milwaukee

I. Activities included in the work of the hospital: Prenatal care; obstetrical care; postnatal care; feeding conferences; prevention of blindness; use of silver nitrate solution, as a matter of routine; wet nursing; milk supplied by nursing mothers to babies who are imperfectly nourished; obstetrical clinic; home for well babies who are suffering from malnutrition.

II. The educational side of our work is the more interesting and of especial importance. It is gratifying to see home surroundings, personal cleanliness much improved after the patient has been under our care.

III. New work undertaken during the year: a home for well, but poorly nourished babies; also, a home for mothers to enable them to nurse their babies.

V. We were organized to care for the indigent, poor, prospective mother, before, during and after confinement. The larger percentage of our work is gratuitous, but all of our patients are told that they must pay if they can, however little this may be. We have therefore free, part pay and full pay patients.

VI. Our work is financed by public subscriptions or donations; benefit performances, tag days, membership fees, etc., and by money received from patients.

SUMMARY OF PRENATAL WORK:

Number of mothers registered during the year ending September 30, 1916, 478; average time under supervision and instruction, 137 days; clinics held daily, except Sunday.

Patients visited once a week by the prenatal nurse and by physician when abnormal condition exists.

Number delivered in hospital, 318; in their own homes, 123; average cost of caring for each patient, about $10 per week for hospital case; $5.00 per week for patients cared for at home.

Effect of prenatal work: stillbirths below 4 per cent; 98 per cent of our babies are breast fed.

MRS. GUSTAV A. HIPKE, *Chairman of Executive Committee.*

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THE WISCONSIN ANTI-TUBERCULOSIS ASSOCIATION

Milwaukee

The interest and the active participation of the Wisconsin Anti-Tuberculosis Association in the baby welfare movement in Wisconsin is the direct and logical result of its realization of the close inter-relation of all preventable disease problems and of its keen appreciation of the fact that the fight against tuberculosis is necessarily closely linked with the fight against all conditions resulting in tuberculosis. If, as has been said and accepted, "tuberculosis is the end of the song which begins in the cradle," it is the obligation of the anti-tuberculosis association to change the nature of that cradle song, to strike at disease in the very beginning. For this reason the Wisconsin Anti-Tuberculosis Association has adopted the slogan "More and Better Care for Children" as representing one of the fundamentals in its educational campaign for a more sturdy manhood and womanhood. For this reason it is giving time and study to the problem of infant mortality, feeling deeply the economic and humanitarian importance of preventing needless sacrifice of life but at the same time being, like the New Zealand Society for the Health of Women and Children, more vitally concerned, as a public health organization, "in improving the all-round fitness of the babies who will live than in reducing the potential deaths." It realizes further, as has been well said by this same New Zealand society, that "the problems are practically identical, since the simple hygienic measures which tend to prevent death in babyhood are also the measures which lay the foundation of strong and healthy minds in sound enduring bodies for those who survive to be our future men and women."

The baby welfare work of the Wisconsin Anti-Tuberculosis Association, in a word, is but the beginning of that health protection in which the care of the child of school age and his education under sanitary conditions are also essentials. As part of its organized effort to secure this health protection and to build up healthy virile men and women able to resist disease, the Association not only devotes the time of special workers to the baby welfare work, to the demonstration of the value of the public health nurse visiting in the home, of school inspection and school nursing, to the problems of school sanitation and the health of school children, but it also aims, above all things, through its lecturers, through its demonstration nurse, through its exhibit and through its publications, to correlate all these details as part of its one great purpose—the health education of the public.

As an incident in this campaign, the Association this year conducted a special study of infant mortality in seven Wisconsin counties. During Baby Week it furnished lecturers and lantern slides to thirty-four communities, supplied over 60,000 pieces of literature, including a Baby Welfare number of the Crusader, and not only divided and sent out its own exhibit but also assisted local committees and women's clubs in the preparation of charts and the making of surveys. Immediately following the Baby Week work, the Association received more requests from communities for the services of its demonstration nurse than could possibly be filled and as a direct result of interest aroused during Baby Week there has been a marked increase in the number of communities employing schools nurses and a steadily growing interest in the educational campaign for the employment of county nurses, a movement yet in its infancy in Wisconsin.

HOYT E. DEARHOLT, M. D., *Executive Secretary.*
LOUISE F. BRAND, *Delegate.*

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INFANTS' FRESH AIR PAVILION, WOMAN'S FORTNIGHTLY CLUB

Milwaukee

I. and II. Under the auspices of the Woman's Fortnightly Club hospital care is provided for sick babies during the hot weather, and lectures are given to mothers on prenatal and postnatal care. The hospital is open during July, August and part of September.

III. Advance made during the year: The care of a larger number of children with the aid of better equipment.

IV. The work is all gratuitous. It is financed by voluntary contributions. The total number of babies cared for in 1915 was 37, and in 1916 was 48. Age limit two months to five years.

MRS. W. H. MCREYNOLDS.

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AMERICAN ASSOCIATION FOR STUDY AND PREVENTION OF INFANT MORTALITY

MEMBERSHIP LIST 1916

Honorary

France

Bertillon, Dr. Jacques.....Paris

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"Friend," Milwaukee
"Friend," Milwaukee
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Knox, Miss Katherine Bowdoin, Baltimore
Knox, J. H. Mason, 3rd, Baltimore
Mellon, Mr. A. W., Pittsburgh
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Shevlin, Mrs. Thomas, Minneapolis
Stern, Mr. Walter, Milwaukee
Stotesbury, Mrs. Edward T., Philadelphia
Volker, Mr. Wm., Kansas City, Mo.
Wade, Mr. and Mrs. J. H., Cleveland
White, Mr. R. J., Baltimore
I. W.

AFFILIATED SOCIETIES

	Official Delegates
Canada	
HAMILTON Babies' Dispensary Guild,	Miss Helen R. Macdonald
MONTREAL University Settlement Milk Station	Miss Kate Carr
California	
SAN FRANCISCO Certified Milk and Baby Hygiene Committee of the California Association of Collegiate Alumnae	
Connecticut	
HARTFORD Connecticut Children's Aid Society	
NEW HAVEN Infant Welfare Association	
WATERBURY Visiting Nurse Association	Miss Edith Madeira
District of Columbia	
WASHINGTON Columbia and Children's Alumnae Association Diet Kitchen Association Graduate Nurses' Association of the District of Columbia Instructive Visiting Nurse Society	Miss Estelle L. Wheeler
Florida	
JACKSONVILLE Infant Welfare Society of Jacksonville State Board of Health	

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Georgia

AUGUSTA	
Georgia State Association of Graduate Nurses	
COLUMBUS	
City Federation of Women's Clubs	

Illinois

CHICAGO	
Infant Welfare Society	Miss Minnie H. Ahrens
Mothers' Aid of the Chicago Lying-In Hospital and Dispensary	Dr. Anna Ross Lapham
Woman's Club	Mrs. Edward P. Wells
LA SALLE	
Infant Welfare Station (Emma Matthieson Chancellor Memorial)	

Indiana

EVANSVILLE	
Babies' Milk Fund Association	Mrs. M. C. Trimble

Iowa

SIOUX CITY	
State Association of Registered Nurses	Miss Charlotte Ballantyne

Kansas

WICHITA	
Christian Service League of America	

Kentucky

LEXINGTON	
Baby Milk Supply Association	Miss Margaret Lynch
LOUISVILLE	
Babies' Milk Fund Association	Dr. Gavin Fulton
Kentucky State Association of Graduate Nurses	

Louisiana

NEW ORLEANS	
Child Welfare Association	

Maryland

BALTIMORE	
Council Milk and Ice Fund	
Department of Health	
Maryland Association for Study and Prevention of Infant Mortality (Babies' Milk Fund Association)	Dr. J. H. M. Knox, Jr. Miss M. F. Etchberger
CUMBERLAND	
Baby Welfare Section of Civic Club of Cumberland	

Massachusetts

BOSTON	
Baby Hygiene Association	Miss Mary A. Jones
Children's Aid Society	
Children's Friend Society	
Committee on Prenatal and Obstetrical Care, Women's Municipal League	Mrs. Wm. Lowell Putnam
Floating Hospital	
Instructive District Nursing Association	
Massachusetts Milk Consumers' Association	Mrs. Wm. Lowell Putnam
Massachusetts Society for the Prevention of Cruelty to Children	
Massachusetts State Department of Health	Dr. Lyman A. Jones
Society for Helping Destitute Mothers and Infants	Miss E. M. Locke
BROOKLINE	
Infant Welfare Clinic of the Brookline Friendly Society	
CAMBRIDGE	
Avon Home	
GREAT BARRINGTON	
Visiting Nurse Association	
HOLYOKE	
Infant Hygiene Association	Dr. Fred Allen Dr. E. P. Bogg, Jr.
LEXINGTON	
Unity Lend-a-Hand Association	
SPRINGFIELD	
Baby Feeding Association	

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Michigan

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Alumnae Association Battle Creek Sanitarium Training School for Nurses	
Michigan Sanitarium and Benevolent Association	
Race Betterment Conference	
DETROIT	
Babies' Milk Fund	Dr. T. B. Cooley
Children's Free Hospital Association	
Farrand Training School Alumnae Association	
Visiting Nurse Association	
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PETOSKEY	
Michigan State Nurses' Association	
ST. JOSEPH	
Michigan Children's Home Society	

Minnesota

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Infant Welfare Department Duluth Consistory Scottish Rite Masons	Miss Elizabeth Heikkila
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Infant Welfare Society	Dr. F. W. Schlutz
ST. PAUL	
Baby Welfare Association	Mrs. M. B. Lettice
Minnesota Public Health Association	Dr. I. J. Murphy

Missouri

ST. LOUIS	
Children's Hospital	
Missouri State Nurses' Association	Miss Mary Kapprell
Pediatric Society	Dr. Borden S. Veeder
Visiting Nurse Association	Mrs. Edmund F. Brown

Montana

HELENA	
Child Welfare Association	
Montana State Association of Graduate Nurses	

New Hampshire

BERLIN	
Berlin Mills Company's District Nurse	
MANCHESTER	
Infant Aid Association	

New Jersey

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Child Federation	Miss Anne H. Wetherill Dr. J. M. Miller
EAST ORANGE	
Baby Welfare Association of the Oranges	
Free Public Library	
ELIZABETH	
Visiting Nurse Association	
HADDONFIELD	
New Jersey Congress of Mothers	
JERSEY CITY	
Division of Child Hygiene, Health Department	
MONTCLAIR	
Board of Health	
St. Vincent's Nursery and Babies' Hospital	Dr. M. J. Synnott
NEWARK	
Babies' Hospital and	Dr. Henry L. Coit
Babies' Hospital Milk Dispensary	
ORANGE	
Diet Kitchen of the Oranges	

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New York

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Infants' and Child's Welfare League	
BATAVIA	
Child Welfare Association	
BINGHAMTON	
Child Welfare Association	Miss Viola M. Lee
BROOKLYN	
Bureau of Charities District Nursing Committee	
Children's Aid Society	
Pediatric Society	
BUFFALO	
District Nursing Association	Miss Irene Leahy
GLOVERSVILLE	
Municipal Mothers' Club	
NEW YORK	
American Nurses' Association	Mrs. Kate Kohlsaat
Babies' Dairy Association	Dr. Reuel A. Benson
Babies' Hospital	
Babies' Welfare Association	Miss Mary Arnold
Bureau of Municipal Research	
Camp Fire Girls	
Children's Welfare Division Bellevue Hospital Social Service Department	
Hebrew Infant Asylum	
Henry Street Settlement	
Jacobi Hospital for Children	Dr. A. L. Goodman
Metropolitan Life Ins. Co., Industrial Dept.	Mr. Louis I. Dublin
National Committee for the Prevention of Blindness	Miss Carrie B. Levy
National League of Nursing Education	Miss N. E. Casey
National Organization for Public Health Nursing	Miss Minnie H. Ahrens
New York Association for Improving Condition of the Poor Bureau of Social Welfare	
Bureau of Educational Nursing	Miss Bessie Le Lacheur
New York Diet Kitchen Association	Miss M. L. Daniels
New York Maternity Polyclinic	Miss Wilcox
New York Milk Committee	Dr. Philip Van Ingen
New York State Charities Aid Assoc. Sub-Committee on Mothers and Infants	
New York State Nurses' Association	
NIAGARA FALLS	
Child Welfare Association	
RIVERDALE-ON-HUDSON	
Health League	Miss Rose A. Schneider
ROCHESTER	
Bureau of Health	
TONAWANDA	
Civic Health League	
UTICA	
Baby Welfare Committee	

North Carolina

RALEIGH	
State Board of Health	

Ohio

CINCINNATI	
Children's Clinic of the Ohio-Miami Medical College	
Jewish Infant Welfare Circle	
Visiting Nurse Association	
CLEVELAND	
Babies' Dispensary and Hospital	Dr. H. J. Gerstenberger
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Day Nursery and Free Kindergarten Association	
Graduate Nurses' Association	
Visiting Nurse Association	
COLUMBUS	
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TOLEDO	
District Nursing Association	
Ohio State Association of Graduate Nurses	

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Pennsylvania

BRYN MAWR	
Bryn Mawr College Library	
JOHNSTOWN	
Associated Charities	
PHILADELPHIA	
Association of Day Nurseries	
Babies' Hospital	Dr. C. A. Fife
Babies' Welfare Association	Dr. H. C. Carpenter
Child Federation	Dr. Wm. N. Bradley
Children's Aid Society of Pennsylvania	
Civic Club—Committee on Children's Welfare	
Federal Council of Churches, National Temperance Union	
Pediatric Society	
Starr Centre Association	Dr. Wm. N. Bradley
READING	
Visiting Nurse Association	
WILKES-BARRE	
Visiting Nurse Association.	
YORK	
Visiting Nurse Association	

Philippine Islands

MANILA	
Liga Nacional Filipina para la Proteccion de la Primera Infancia	

Rhode Island

EDGEWOOD	
R. I. Branch National Congress of Mothers and Parent-Teacher Assn.	Mrs. Edward Moulton
PROVIDENCE	
Baby Welfare Committee	
District Nursing Association	Miss Alice Hall
Mothers' Club	

Texas

HOUSTON	
Social Service Bureau	

Utah

SALT LAKE CITY	
Ladies' Literary Club	
Utah Congress of Mothers	

Virginia

RICHMOND	
Board of Health	

Wisconsin

BELOIT	
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Child Welfare Committee, Milwaukee Chapter Daughters of the American Revolution	
Children's Free Hospital	
Division of Child Hygiene, Department of Health	Dr. E. T. Lobedan
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Marquette University of Medicine	Miss Agnes L. Murray
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Milwaukee Maternity Hospital and Free Disp. Assoc.	Mrs. G. A. Hipke
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OSHKOSH	
Twentieth Century Club	
RIPON	
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New Zealand

Campbell, Miss Annie D., Karitane-Harris Hospital .....Anderson's Bay, Dunedin
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Campbell, Dr. G. A., Director Division of Child Hygiene .....Toronto
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Porter, Miss Ethel M.....Canadian Home Journal, Toronto
Wodehouse, Dr. R. E., Provincial Board of Health Ontario

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Panama

Brakemeier, Miss Louise, Hospital Santo Tomas..Panama City

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Musgrave, Dr. E. W.....General Hospital, Manila

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Meyer, Dr. Jerome .....1224 Brown-Marx Bldg. Birmingham
Snyder, Dr. J. Ross.....Woodward Bldg., Birmingham

Arizona

Newberne, Dr. R. E. L., U. S. Indian Service....Parker

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Ash, Dr. R. L.....Galen Bldg., San Francisco
Baldwin, Mr. A. R.....932 Mills Bldg., San Francisco
Bentley, Mrs. C. H.....3198 Pacific Ave., San Francisco
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Breed, Miss J. L., R. N., Division of Infant Welfare, Health Dept.....Temple Block, Los Angeles
Brown, Dr. Adelaide.....240 Stockton St., San Francisco
Certified Milk and Baby Hygiene Com. Cal. Assn. of Collegiate Alumnae (Affil.).....San Francisco
Colliver, Dr. John A.....1221 Baker-Detwiler Bldg., Los Angeles
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Fleischner, Dr. E. C.....350 Post St., San Francisco
Franklin, Miss H. Grace.....521 S. Figueroa St., Los Angeles
Goethe, Mr. C. M.....Iverness Bldg., Sacramento
Goodrich, Mrs. C. S.....1840 Broadway, San Francisco
Gray, Mr. R. S.....Commonwealth Club, San Francisco
Haynes, Dr. J. R.....429 Consolidated Realty Bldg., Los Angeles
Horsburgh, Mrs. Jas., Jr.....2900 Devisadero St., San Francisco
Johnson, Dr. P. V. K.....820 Security Bldg., Los Angeles
King, Dr. C. L.....70 S. Euclid Ave., Pasadena
Lewitt, Dr. Wm. B.....210 Post St., San Francisco
Lucas, Dr. Wm. P., University of Cal.....San Francisco
McCleave, Dr. T. C.....2844 Garber St., Berkeley
McDuffie, Mrs. Duncan.....156, The Tunnel Road, Berkeley
McIntosh, Mrs. C. K.....Redwood City
Mattison, Dr. S. J.....707 Citizens Bk. Bldg., Pasadena
Moffitt, Dr. H. C.....240 Stockton St., San Francisco
Porter, Dr. R. L.....240 Stockton St., San Francisco
Powers, Dr. L. M., Commissioner of Health....Los Angeles
Sawyer, Dr. Wilbur A., Sec'y State Board of Health .....Sacramento
Smith, Dr. Dudley.....Hotel Oakland, Oakland
Strictmann, Dr. Wm. H.....221 Central Bk. Bldg., Oakland
Thum, Mr. William.....Pasadena
Titsworth, Mr. F. S.....Box 27, La Jolla
Willitts, Dr. Emma K.....Galen Bldg., San Francisco
Wright, Miss Bertha.....2420 Durant Ave., Los Angeles

Colorado

Amesse, Dr. J. W.....452 Metropolitan Bldg., Denver
Gengenbach, Dr. Frank P.....906 Metropolitan Bldg., Denver
Gilman, Mr. A. E., University of Colorado.....Boulder
Jones, Dr. S. Fosdick.....716 Metropolitan Bldg., Denver
Kenney, Dr. Frank W.....712 Metropolitan Bldg., Denver
Ramaley, Mr. Francis, University of Colorado....Boulder

Connecticut

Bartlett, Mrs. C. J.....183 Bishop St., New Haven
Bennett, Mrs. Winchester.....76 Everitt St., New Haven
Bolling, Mrs. R. C.....Greenwich
Bronson, Miss Margaret L.....1198 Chapel St., New Haven
Camp, Mr. W. H.....43 E. Main St., Waterbury
Carle, Mr. Robert W.....P. O. Drawer D., New Haven
Carmalt, Dr. W. H.....261 St. Ronan St., New Haven
Conn. Children's Aid Society (Affil.).....Hartford
Farnam, Mr. H. W.....43 Hillhouse Ave., New Haven
Fisher, Prof. and Mrs. Irving.....460 Prospect St., New Haven
Goodenough, Dr. E. W.....44 Leavenworth St., Waterbury
Goodrich, Dr. C. A.....5 Haynes St., Hartford
Gregory, Mrs. A. W.....63 Gillett St., Hartford
Greenway, Dr. James C.....Greenwich
Hillyer, Mrs. A. R.....91 Elm St., Hartford
Infant Welfare Association (Affil.).....200 Orange St., New Haven
Linde, Dr. Joseph I.....163 York St., New Haven
Locke, Dr. H. L. F., Supt. Isolation Hospital..Hartford
Lyman, Dr. D. R.....Wallingford
McLellan, Dr. E. A., Health Officer.....Bridgeport

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Madeira, Miss Edith, Supt. Visiting Nurse Assn..Waterbury
Mead, Dr. Kate C.....165 Broad St., Middletown
Platt, Mrs. Orville H.....Washington
Rettger, Mr. Leo F.....198 Edwards St., New Haven
Rockefeller, Mrs. P. A.....Greenwich
Scott, Mrs. E. D., Sec'y. Conn. Research Assn.....Greenwich
Slemons, Dr. J. Morris, Yale Medical School....New Haven
Snowden, Miss Ada, R. N., Public Health Nurse..Litchfield
Steele, Dr. H. Merriman.....226 Church St., New Haven
Steiner, Dr. W. R.....4 Trinity St., Hartford
Talcott, Mrs. George S.....58 Franklin Sq., New Britain
Townsend, Miss Mariana.....260 Washington St., Middletown
Visiting Nurse Association (Affil.) .....87 Central Ave., Waterbury
Winslow. Prof C.-E. A., Yale Medical School.....New Haven

Delaware

Wales, Dr. G. T.....Delaware and Woodland Aves., Wilmington

District of Columbia

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